SCANTEAM® 2070 BASE
SCANTEAM® 3470 CCD
SCANTEAM® 5770 LASER

Cordless
Systems Manual

Welch Allyn®

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Data Collection Division Web Address: http://dcd.welchallyn.com

CE

The CE mark on the product indicates that the system has been tested to and conforms with the provisions noted within the 89/336/EEC Electromagnetic Compatibility Directive and the 73/23/EEC Low Voltage Directive.

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LR 89329
NRTL/C

C.S.A. Statement
This product must be used with a certified Class 2 power supply or be powered by a certified SELV (Safety Extra Low Voltage) output.

RF Approvals	This product complies with the following:	
	U.S.A.	FCC Part 15.249 Certified
	Canada	RSS 210 Certified
	Europe	ETS 300 328 Certified
	Mexico	NOM–EM–121–SCT1–1994 Certified
Safety Approvals	This product complies with the following:	
	U.S.A.	UL Listed, C22.2 No. 950 / UL 1950
	Canada	cUL Listed
	Europe	TÜV Rheinland GS Licensed, EN 60950 (IEC 950)
	Mexico	NYCE Certified, NOM 19

Statement of Agency Compliance

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Class B Compliance Statement

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

Caution: Any changes or modifications made to this device that are not expressly approved by Welch Allyn, Inc. may void the user's authority to operate the equipment.

Note: To maintain compliance with FCC Rules and Regulations, cables connected to this device must be *shielded* cables, in which the cable shield wire(s) have been grounded (tied) to the connector shell.

Canadian Notice

This equipment does not exceed the Class B limits for radio noise emissions as described in the Radio Interference Regulations of the Canadian Department of Communications.

Le present appareil numerique n'emet pas de bruits radioelectriques depassant les limites applicables aux appareils numeriques de la classe B prescrites dans le Reglement sur le brouillage radioelectrique edicte par le ministere des Communications du Canada.

CDRH Laser Safety Statement

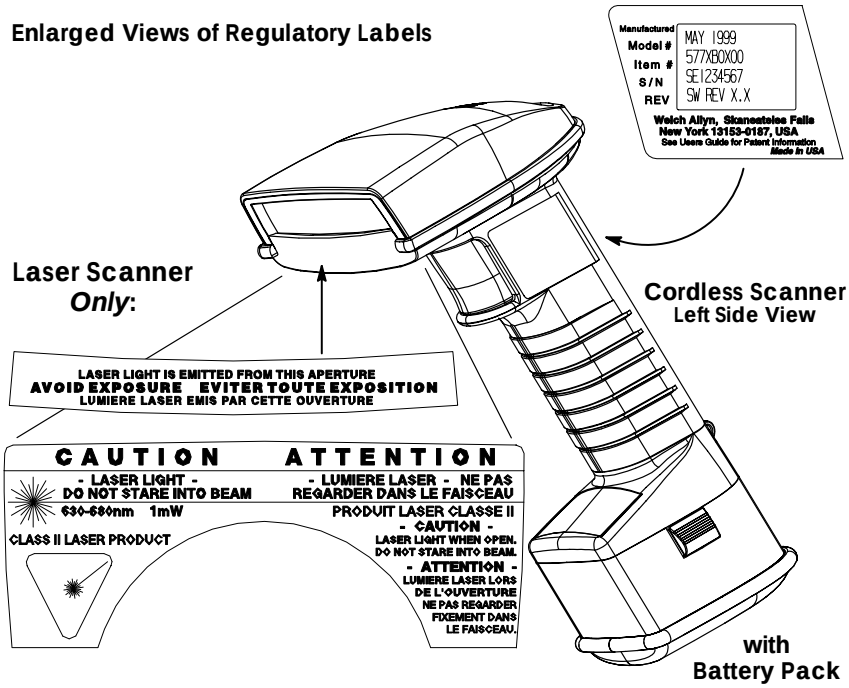
This product complies with US DHHS 21 CFR J Part 1040.10. This product is a CLASS II LASER PRODUCT with a maximum output of 1.0 mW at 670 nanometers and continuous wave.

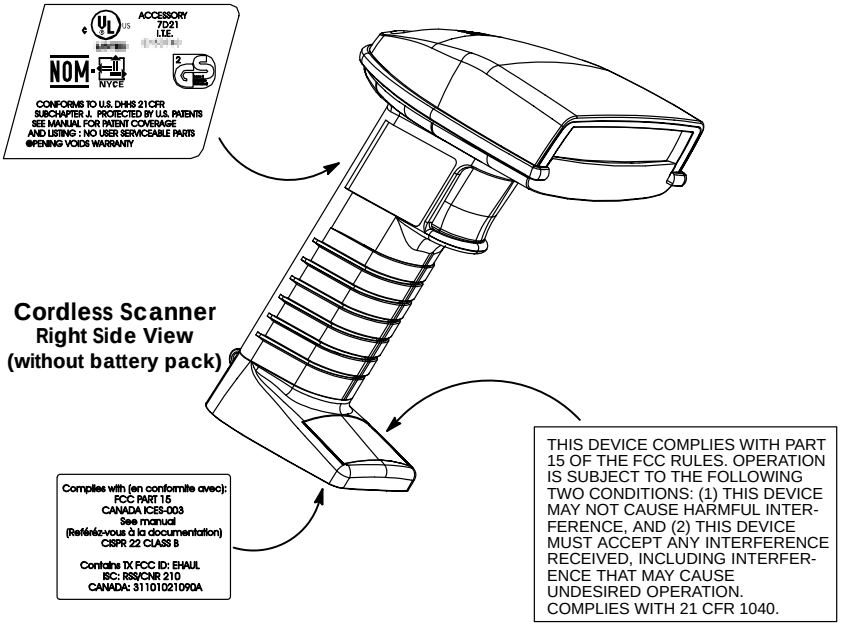
EN 60825–1 Laser Safety Statement

This product is classified as a CLASS 2 LASER PRODUCT with a maximum output of 9.0 mW at 670 nanometers per EN 60825–1:1994, Issue 2, June 1997.

Statement of Agency Compliance

Enlarged Views of Regulatory Labels




ACCESSORY
7021
I.T.E.
NOM
NYCE
CONFORMS TO U.S. DHHS 21 CFR
SUBCHAPTER J. PROTECTED BY U.S. PATENTS
SEE MANUAL FOR PATENT COVERAGE
AND LISTING : NO USER SERVICEABLE PARTS
OPENING VOIDS WARRANTY
Cordless Scanner
Right Side View
(without battery pack)
Complies with (en conformite avec):
FCC PART 15
CANADA ICES-003
See manual
(Référéz-vous à la documentation)
CISPR 22 CLASS B
Contains TX FCC ID: EHAUL
ISC: RSS/CNR 210
CANADA: 3110102109OA
THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.
COMPLIES WITH 21 CFR 1040.

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Introduction

The Cordless Scanning System consists of the SCANTEAM 2070 Base unit and at least one SCANTEAM 3470 Cordless CCD or SCANTEAM 5770 Cordless Laser Scanner. Up to nine scanners may be associated with one base. Each cordless scanner has a removable, rechargeable battery pack and provides real time decoding within a 50 foot (15.24 meter)† radius of the Base unit.

The Cordless System is an economical, durable solution for a wide variety of portable data collection applications. The Cordless System features:

- a tough, ergonomic thermoplastic housing for comfort and durability.
- recognition and decoding of the most popular, industry-standard bar code symbologies.
- scanner coverage of up to 7854 square feet (730 square meters) in open air environments.
- a wide range of interfaces that are compatible with many POS, keyboard wedge, and RS-232 terminals.
- visible and audible feedback for confirmation of a successful decode.
- a choice of rechargeable batteries designed to operate through a whole work day.

This Systems Manual contains information to help you set up, operate, and program the Cordless System. Product specifications, connector pinouts, scan maps, a troubleshooting guide, and customer information are also provided.

The Cordless System can be programmed for many communications parameters and input/output protocols compatible to the host, as well as advanced data editing and formatting. Programming is accomplished by using the single programming bar codes in this manual (Sections 2 through 4).

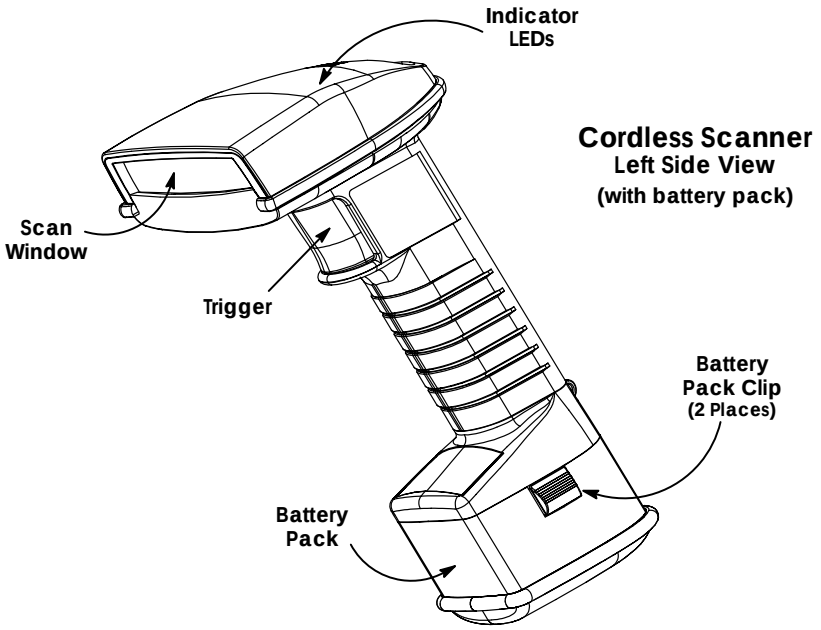
This section contains the following “Getting Started” information:

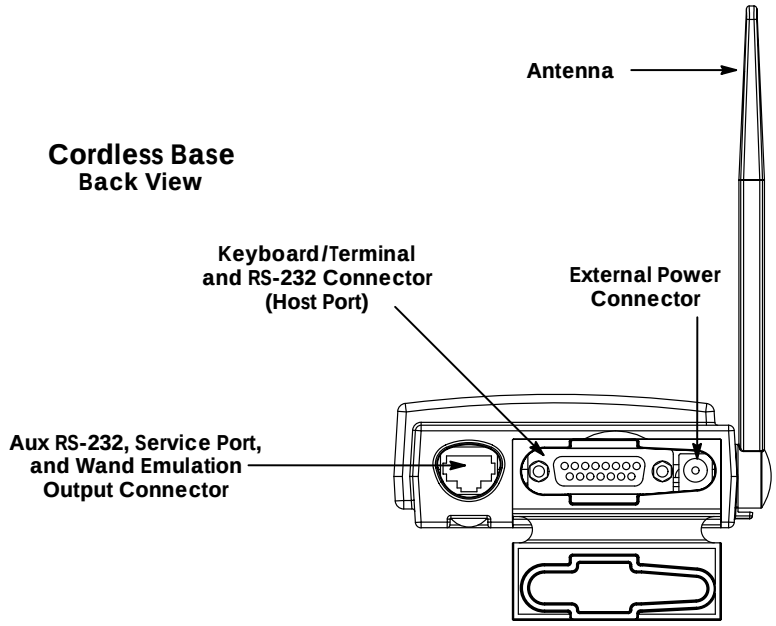
- Cordless System Main Components
- Battery Pack and Charging Information
- Cordless System Set Up and Connection
- Beeper and LED Sequences and Meaning
- Basic Operation of the Cordless System
- Communication Between the Cordless System and the Host
- Accessories for the Cordless System

† A 50 foot radius is obtained under optimal, “open air” conditions. Signals between the Base and its scanners need a clear path to communicate, free from RF interference.

Getting Started

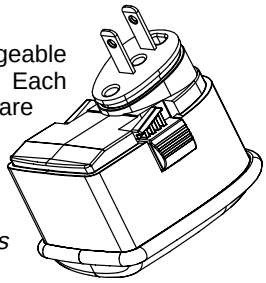
Cordless System: Main Components





Getting Started

About the Battery Pack



Power is supplied to the Cordless Scanner by a rechargeable battery pack that snaps onto the bottom of the scanner. Each scanner is shipped with a battery pack †. Battery packs are offered in a choice of Nickel Cadmium (NiCad) cells, as an entry level solution, or a premium battery pack based on Nickel Metal Hydride (NiMH) cells. *(See Battery Specifications, page NO TAG, for the differences between the two types of battery packs, as well as storage information.)*

† Order backup battery pack(s) or replacement batteries from your distributor.

North American Charging Information

The battery pack is designed to plug into any two prong North American AC power outlet (110/120 Volt) for direct charging. You need no additional equipment and you can recharge the pack virtually anywhere.

Worldwide Charging Information: Charge Strips

Since the battery pack is rated for both 110/120 60 Hz and 230/240 volt 50 Hz applications it may be recharged worldwide. For international charging, to accommodate the wide variety of electrical outlets, a custom charge strip is required to charge the batteries. The charge strip supports both versions of battery packs and is offered for two or six battery pack configurations.

Contact your distributor for more information or to order Charge Strips.

Battery Pack Recommendations

- Charge the battery pack immediately before use or at least within a couple of days of use.
- Remove the battery pack from the power outlet or charge strip within 24 hours after charging is completed. Avoid extended overcharging.
- Periodically fully discharge the battery pack.
- Avoid using the battery pack in extreme temperatures. Do not use or place the charge strip in locations that are extremely hot or cold, dusty or dirty, very humid, or subject to vibration.
- Do not disassemble the battery pack or the charge strip. There are no user-serviceable parts in the battery pack or in the charge strip.

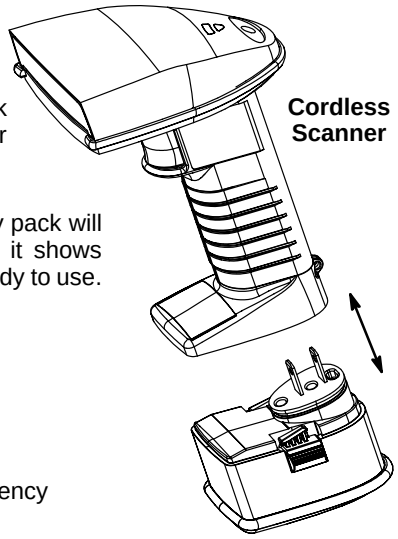
Proper Disposal of the Battery Pack

When the battery pack has reached the end of its useful life, the batteries should be disposed of by a qualified recycler or hazardous materials handler. Do not incinerate the battery pack or dispose of the battery pack with general waste materials. Contact the Product Service Department (see page NO TAG) for recycling or disposal information.

Getting Started

Charging Your Battery Pack

Charge the Battery Pack by following the steps shown below:



❶ Plug the battery pack directly into any common 120 Volt AC outlet.†

To charge more than one battery pack (or to charge the pack for all other countries), use the Charge Strip.

❷ The LED on the bottom of the battery pack will light red when the unit is charging; it shows green when it is fully charged and ready to use.

Charge Time:

NiCad Battery Pack
8 hours at 120 VAC, 60 hz
4 hours at 220 VAC, 60 hz
5 hours at 220 VAC, 50 hz
NiHM Battery Pack
4 hours at any voltage and frequency

❸ After the battery pack is fully charged, attach it to the Cordless Scanner by pressing the pack firmly (align the prongs on the pack with the mating receptacles) in the base of the scanner until the release buttons click, holding the pack firmly in place. *(When you attach a charged battery pack to the Cordless Scanner, you will hear a single beep.)*

❹ If you haven't set up your Cordless System, turn to the next page for instructions.

When the battery pack needs recharging, the yellow LED on top of the scanner pulses in short, continuous blinks and the scanner won't beep when you pull the trigger. If the LED stops flashing when the temperature lowers or you do not use the battery pack for some time, you still need to charge the battery pack to avoid damaging the battery pack or causing scanner memory loss.

† Plug the battery pack into a wall socket in North America ***only***. Failure to comply could result in equipment failure.

Getting Started

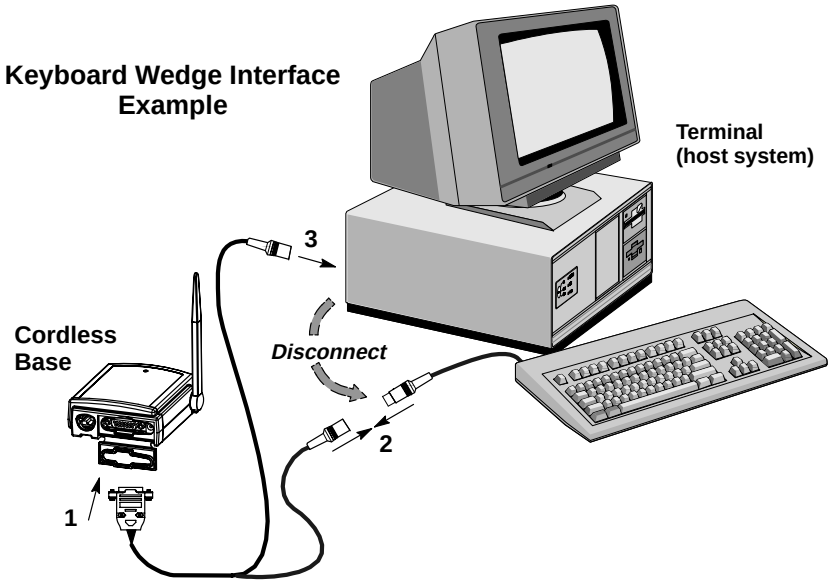
Setting Up and Connecting the Cordless System

Install the Base and Cordless Scanner by following the steps shown below:

Important: *Make sure the Cordless Scanner's battery pack has been fully charged. See page 1–4 for charging instructions.*

❶ Turn off the power to the host system.

❷ Connect the interface cable to the Base and to the terminal/computer (steps 1–3, shown in the illustration below). Depending on your application, the interface cable you need may be different than the one shown below.



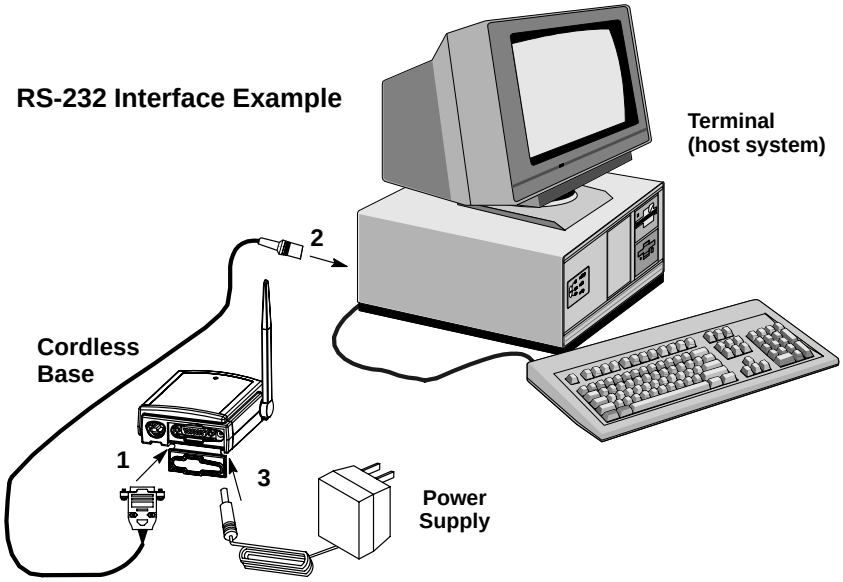
(Cable, Keyboard, and Terminal may vary.)

Note: *For optimal coverage, place the Base and its antenna as far away from other sources of RF interference, with a clear transmitting path to the scanner(s).*

The Base can be mounted on a wall or a ceiling. Try to place the Base so that the antenna is in a vertical (straight up and down) position whenever possible. An extra Base Association Bar Code is provided in case the Base is mounted where the label might be difficult to scan (step 4 on the next page describes the Association process).

In an RS-232 configuration (see the illustration on the next page), connect your interface cable between the Base unit (step 1 in the illustration) and the host system (2). You also need to use an external power supply (3). Contact your distributor for more information on ordering RS-232 cables or power supplies.

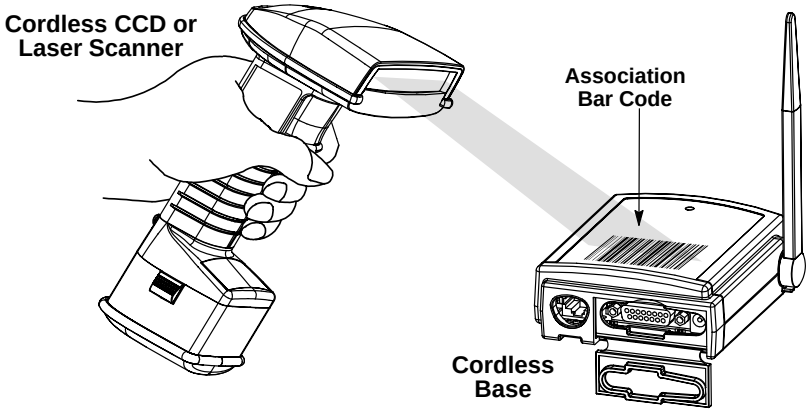
Setting Up and Connecting the Cordless System, continued



(Cable, Keyboard, and Terminal may vary.)

❸ Turn on the power to the host system. Verify that the Base is on; the green LED on top of the unit should blink. (The Base doesn't have a beeper.)

❹ Using the Cordless Scanner, scan the Association Bar Code (the bar code label on the top of the Base) to link that scanner to the Base (see the illustration shown below).



Two quick beeps followed by a single beep (with a short delay in between) from the scanner indicates a "good" association. The scanner is in communication with the Base.

Setting Up and Connecting the Cordless System, continued

Note: *After association, if the battery pack is removed from the scanner and replaced, the scanner will automatically re-associate to the base if the base has remained powered up. In this case, the scanner will beep on power up and beep a second time after full association, about five to ten seconds later.*

After your Cordless Scanner has been associated with its base unit:

❺ Program your Cordless System to work with your terminal or computer by scanning the Terminal Setup Codes. Use the Supported Terminal list (Pages NO TAG to NO TAG) to scan your terminal's Terminal ID.

With Plug and Play programming, you scan *only* one bar code to program the Cordless System to work with a designated interface, including any required prefixes and suffixes.

❻ To determine if your Cordless System is set up correctly, scan one of the sample bar codes on the back cover of this manual.

Connecting More Scanners to the System

Up to nine Cordless Scanners may be associated with one Base unit †. Add more Cordless Scanners to a Base unit by following the steps shown below:

❶ Make sure the Cordless Scanner's battery pack has been fully charged.

❷ Scan the Association Bar Code (the bar code label on the top of the Base) to link each scanner to the Base.

The Base stores a unique I.D. for each scanner (up to nine) to identify the scanner during data communication. Two beeps followed by a single beep from the scanner indicates a "good" association. The Base rejects a tenth Cordless Scanner trying to link to its network, sending the scanner an error command. (A rejected scanner beeps three times, indicating an unsuccessful association.)

Note: *When you associate more scanners with the Base, you don't have to program your Cordless System to communicate with your terminal or computer if you've already completed step 5, above.*

† within a 50 foot (15.24 meter) radius of the base, in an open air environment

Beeper and LED Sequences and Meaning

The Base contains a green LED that indicates the status of the unit and verification of its communication with the host system. The Cordless Scanner contains a beeper and two LEDs on the top of the unit (green and yellow) to indicate its power up, communication, and battery pack status. The tables below list the indication and meaning of the beeps and LED illumination for the Base and Cordless Scanner.

Base LED Indication

Sequence	Meaning
LED on continuously	Power on, system idle
LED blinking, long duration	Power on, diagnostic error
LED blinking, short duration	Communicating with Scanner or Host
LED blinking, four long pulses	Communication error detected

Scanner Beep Indication

Sequence	Meaning
No beep	No scanning, trigger pulled, low battery (trigger pulled)
One beep	Successful decode/communication, successful parameter upload to the Scanner
Two beeps	Enter/exit programming mode
Three beeps	Unsuccessful communication or programming change, unsuccessful association to Base (tenth scanner)

Scanner LED Indication

Sequence	Meaning
Green LED on	Trigger pulled
Green LED on, five seconds	Successful decode/communication
Green LED blinks, five seconds	Successful decode, unsuccessful communication, out of range
Yellow LED on	Scanning, trigger pulled
Yellow LED blinks, five seconds	Low battery (trigger pulled), out of range

Getting Started

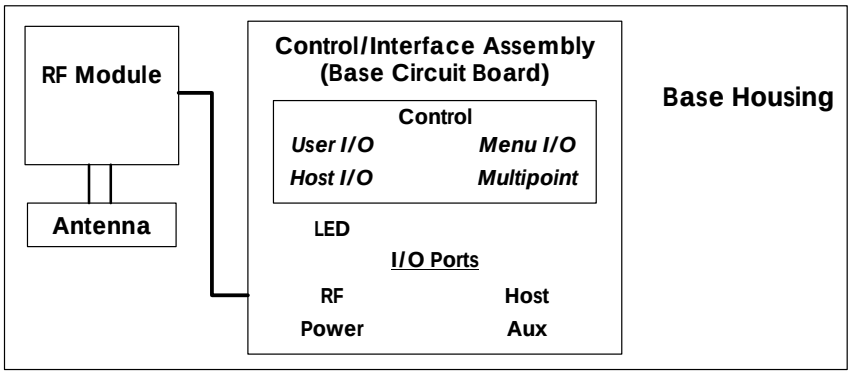
Basic Operation of the Cordless System

The following system block diagrams (on this and the following page) illustrate the basic operating components of the Cordless System.

Cordless Base

The Cordless Base provides the link between the Cordless Scanner and the host system. The Base contains a control/interface assembly and an RF communication module. The RF communication module performs the data exchange between the Cordless Scanner and the control/interface assembly. The control assembly coordinates the central interface activities including: transmitting/receiving commands and data to/from the host system, performing software activities (parameter menuing, visual indicator support, power-on diagnostics), and data translation required for the host system.

Cordless Base



RF (Radio Frequency) Module Operation

The Cordless System uses a state of the art radio to transmit and receive data between the scanner and the Base. Designed for point-to-point and multipoint to single point applications, the radio transmits data at a rate of 1 megabit per second (MBPS) in a half duplex (2 way) communications mode. The radio operates using a license free, low power, 2.4 GHz spread spectrum (frequency hopping) technique. This transmission technique, which sends relatively small data packets at a fast data rate over a radio signal with randomly changing frequencies, makes the Cordless System highly responsive to a wide variety of data collection applications.

The RF radio used in the Cordless System has been tested and approved as complying with the two leading standards-setting organizations that serve as regulatory models for compliance in most countries. In North America, the radio is approved under the standards in FCC B Part 15.249 regulations and, in Europe, under the standards in ETS 300 328 regulations. *(See page NO TAG for a chart of regulatory and safety agency approvals.)*

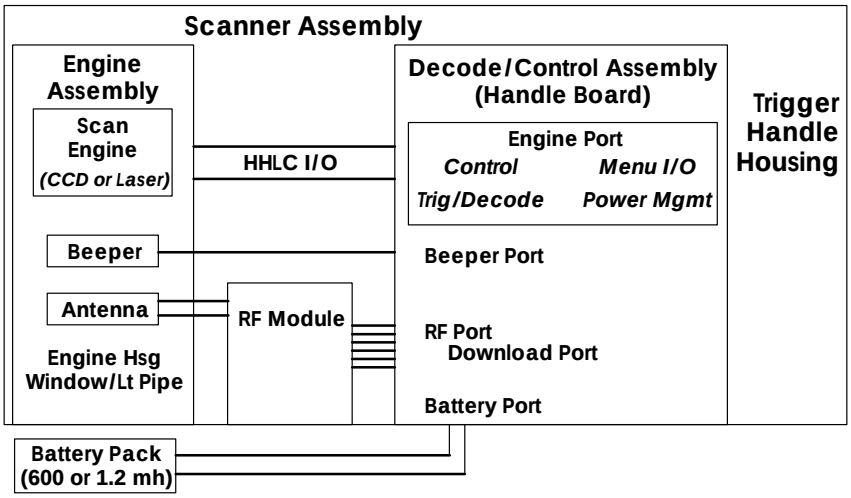
Getting Started

Cordless Scanner

The Cordless Scanner enables bar code scanning with non-contact CCD or Laser input devices, real time decoding, and host connectivity within a 50 foot (15.24 meter)† radius of the Base unit. It provides the initial bar code data acquisition function and communicates to the Base. The scanner is comprised of a CCD or laser scan engine, a decode/control assembly, and an RF communication module.

The scan engine performs the bar code image illumination and detection. The decode/control assembly coordinates the central communication activities including: capturing and decoding the bar code image data, performing software activities (parameter menuing, visual indicator support, low battery indication), and data translation required for the host system. The RF communication module performs the data exchange between the scanner and the Base.

Cordless Scanner



† A 50 foot radius is obtained under optimal, "open air" conditions. Signals between the Base and its scanners need a clear path to communicate, free from RF interference.

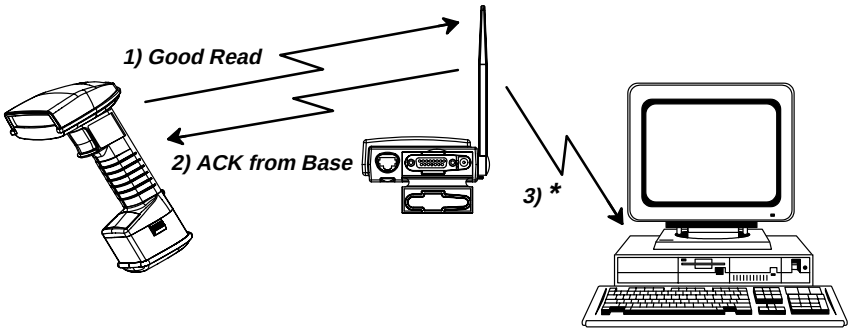
Communication Between the Cordless System and the Host

The Cordless Scanner provides you with immediate feedback in the form of a "good read" indication (a green LED on the scanner and an audible beep) after you've scanned a bar code correctly and the base has acknowledged receiving the data. The Cordless System also provides two way communication between the Scanner and the Base or host system.

When data is scanned, the data must be accurately sent to the host system via the Base unit. Confirmation from the host system or the Base tells you that the data sent was received by the host. The Cordless Scanner recognizes two forms of host confirmation: data acknowledgement (ACK) from the base unit or an "ACK" from the host system.

Acknowledgement from the Base

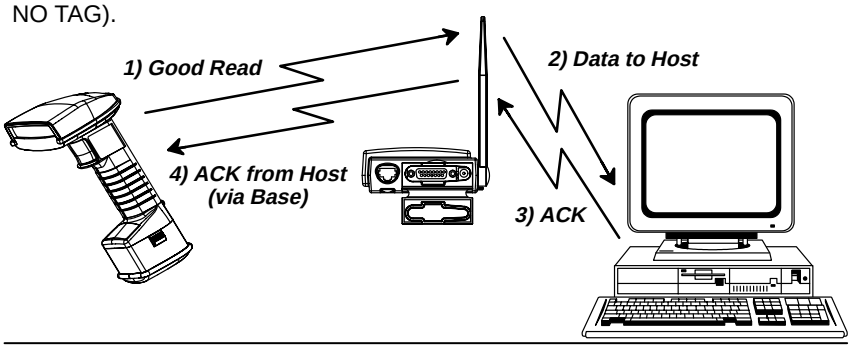
If the Cordless System is configured for a keyboard wedge host interface, a signal (ACK) is sent from the Base confirming that the data was received and is being sent on to the host system. (Since keyboard wedge interfaces cannot provide bi-directional communications, they do not permit host confirmation.)



**** Base sends data to Host after ACK is sent to Scanner***

Acknowledgement from the Host System

Host system confirmation may be implemented with a bi-directional interface like Host RS-232. In this configuration, when the base unit receives the scanned data from the scanner and forwards it to the host, the Cordless System waits for a signal from the host that it received the data. (For information on enabling this feature and using Host Escape commands, see Host Ack Selection, page NO TAG).



Accessories

Accessories for the Cordless System

Several accessories are available for the Cordless System. Contact your distributor for more information or to order accessories.

Battery Packs

Two types of battery packs are available. Each permanently sealed battery pack contains four rechargeable "AA" cells, plus circuitry to allow recharging via standard AC power outlets (eliminating cumbersome and expensive custom charging stations). The entry level battery pack contains NiCad battery cells, while the NiMH battery pack is the premium battery choice with its longer operating and shorter charging time. Each scanner is shipped with one battery pack. Order back up batteries or replacement batteries separately.

Charge Strips

To recharge more than one Battery Pack at one time, Charge Strips are available. The charge strips recharge either type of battery pack (NiCad or NiMH), are offered in two or six outlet configurations, and may be conveniently wall mounted or set on flat surfaces. The charge strip uses a standard PC (IEC 320) grounded power cord between the charge strip and the electrical AC outlet.

Note: *International versions of the power cords are provided by Welch Allyn's country partners. Welch Allyn does not supply these power cords.*

Belt Holster

The belt holster holds the Cordless Scanner when not in use. The belt holster consists of a foam covered wire frame clasped to an adjustable nylon web belt designed to be worn around the waist.

Wall Mount Kit (Standard)

The standard wall mount holder stores the Cordless Scanner on a vertical surface for convenient access. The scanner easily slides between two rubberized fingers that hold the scanner when it is not in use.

Wall Mount Kit (Industrial)

Similar to the standard wall mount holder, the rubberized fingers on the industrial wall mount holder are smaller to maintain a firm grasp on the scanner under jolting and jarring conditions, such as those expected in fork lift applications.

Visual Menu™

Visual Menu is a software configuration tool that provides the ability to configure the Cordless System by connecting the Base unit to the COM port of a PC. Visual Menu allows you to download firmware upgrades, change programmed parameters, and create and print programming bar codes.

Introduction

Use this section to program the Cordless System to work with your terminal or computer (host system).

This programming section contains the following menu selections:

- Plug and Play
- Terminal Interface
- Country Code
- Keyboard
- Output Delays
- Wand Emulation
- Laser, Reset Factory Settings, and Status

All operating parameters are stored in non-volatile memory resident in the Cordless System, where they are permanently retained in the event of a power interruption. When you receive your Cordless System, certain operating parameters have already been set. These are the factory defaults, indicated by the symbol "✶" on the programming pages (beneath the default programming bar code). Default Charts that list all the factory settings may be found near the end of this Systems Manual.

A Programming Chart (found on the inside back cover of this manual) contains alphanumeric bar codes for setting additional programming options, such as the digits representing Symbology Message Length. The chart explains how and when to use the alphanumeric bar codes.

Note: *After scanning the following menu selections, there will be a pause (up to 20 seconds) while the Base unit processes and uploads the new menuing information to its parameter tables:*

Plug and Play Selections (on the next two pages)
Factory Default Settings: ALL Application Groups (last page, Section 2)
Application Work Group Selections (Section 4)

A Sample Bar Codes page (located on the back cover of this manual) provides bar code symbols you may scan to verify that your Cordless System has been programmed correctly and is communicating with your host system.

Plug and Play Selections

Industrial Interface: IBM PC

IBM PC AT and Compatibles Interface
(also PS/2 30-286, 50, 55SX, 60, 70, 70-061, 70-121, 80)

(Factory Default)

*The bar code above **also** programs a carriage return (CR) suffix.*

Industrial Interface, Aux Port: RS-232

RS-232 Interface

*The bar code above **also** programs the following parameters:*

Programmable Option	**Setting**
Baud Rate	38,400 bits per second
Parity	None
Data Format	8 data bits, 1 stop bit
Prefix	None
Suffix	Carriage Return (CR)

Note: *Plug and Play menu codes will default all settings before programming the interface.*

Plug and Play Selections

Industrial Interface, Aux Port: Wand Emulation Black High

Wand Emulation (Code 39 Format) Interface

Wand Emulation (Same Code Format) Interface †

*These bar codes **also** program the following parameters:*

Programmable Option	**Setting**
Transmission Rate	25 inches per second
Output Polarity	Black High

Industrial Interface, Aux Port: Wand Emulation White High

Wand Emulation (Code 39 Format) Interface

Wand Emulation (Same Code Format) Interface †

*These bar codes **also** program the following parameters:*

Programmable Option	**Setting**
Transmission Rate	25 inches per second
Output Polarity	White High

† Supports Code 39, UPC, EAN, Code 128, Interleaved 2 of 5, and Codabar. All other codes output as Code 39.

Terminal Interface Selections

If your terminal is not one of the Plug and Play options, you must program one of the terminals listed below. To program the terminal interface, scan the Program Terminal Interface bar code below, then scan the appropriate two digit Terminal I.D. code and Save from the Programming Chart on the inside back cover of this manual.

Program Terminal Interface

(Factory Default = ID 03)

Supported Terminals

Terminal	Model(s)	Terminal I.D.
ADI	1496	72
Bull	BDS–7 Honeywell (HDS–7)	35
DEC	PC433 SE (Portable PC)	03
DEC	VT–220, 320, 330, 340, 420	04
DEC	VT–510, 520, 525 PC Keyboard	05
DELL	Latitude (Portable PC)	03
DTK	486 SLC (Portable PC)	03
Esprit	200, 400	05
Falco	5220	47
Fujitsu	Stylistic (Portable PC)	03
IBM	PC XT	01
IBM	PS/2 25, 30, 77DX2	02
IBM	AT, PS/2 30–286, 50, 55SX, 60, 70, 70–061, 70–121, 80	03
IBM	AT Compatibles Keyboard Emulation (Non-wedge)	03
IBM	Thinkpad 365, 755 CV (Portable PC)	03
IBM 102 Key	3151, 3161, 3162, 3163, 3179, 3191, 3192, 3194, 3196, 3197, 3471, 3472, 3476, 3477, 3482, 3486, 3488	06
IBM 122 Key	3179–1, 3191, 3192, 3471, 3472, 3194	07
IBM 122 Key	3196, 3197, 3476, 3477, 3482, 3486, 3488	08
IBM 122 Key	3180	24
IDEAssociates	276, 277, 486, 487, 587	08
IDEAssociates 102 Key	276, 277, 486, 487, 587	84
IDEAssociates 122 Key	276, 277, 486, 487, 587	71

Terminal Interface Selections

Supported Terminals

(Factory Default = ID 03)

Terminal	Model(s)	Terminal I.D.
Lee Data	IIS	07
Midwest	Micro Elite TS 30 PS (Portable PC)	03
Mitak	4022 (Portable PC)	03
Olivetti	M19, M24, M28, M200	01
Olivetti	M240, M250, M290, M380, P500	03
Relisys	TR 175	03
RS232 Host Port		50
RS232 Aux Port		00
Serial Wedge		50
Silicon Graphics	Indy, Indigo II	05
Televideo	990, 995, 9060	02
Texas Instruments	Extensa 560CD (Portable PC)	03
Toshiba	2600 (Portable PC)	03
Toshiba	Satelite T1960, T2130, CS (Portable PC)	03
Wand Emulation Code 39 output (via Aux Port)		61
Wand Emulation Same Code output (via Aux Port)		64
Zenith	Z–note (Portable PC)	03

Country Code Selections

Keyboard Country Selection

This programming selection allows you to re-map the keyboard layout for the selected country. As a general rule, the following characters are not supported by the Cordless System for countries other than the United States:

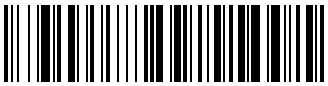
@ | $ # { } [ ] = / ‘ \ < > ~

✶ United States

Belgium

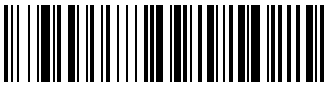
Denmark, Finland, Norway, Sweden

France



Germany, Austria

United Kingdom



Switzerland

Italy

Keyboard Selections

Keyboard Layout Selection

This selection allows you to program the Cordless System to transmit the proper keycodes when interfacing with a “Normal” (PC AT type), telephone, calculator, Alpha, or Numeric keyboard layout. Choose the keyboard layout that defines your keyboard.

✶ Layout 1 (Telephone)

Layout 2 (Calculator)

Layout 3 (PC AT)

Layout 4 (Alpha)

Layout 5 (Numeric)

Keyboard Selections

Keyboard Style Selections

Keyboard Style Selections

This programming selection allows you to program special keyboard features, such as Caps Lock and Shift Lock.

Regular is used when you normally have the Caps Lock key off.

Caps Lock is used when you normally have the Caps Lock key on.

Shift Lock is used when you normally have the Shift Lock key on. (Not common to U.S. keyboards.)

Automatic Caps Lock is used if you change the Caps Lock key on and off. The software tracks and reflects if you have Caps Lock on or off (AT and PS/2 only). This selection can only be used with systems that have an LED that notes the Caps Lock status.

Emulate External Keyboard should be scanned if you do not have an external keyboard (IBM AT or equivalent).

✶ Regular

Caps Lock

Shift Lock

Automatic Caps Lock

Emulate External Keyboard

Keyboard Selections

Keyboard Style Modifiers

Keyboard Style Modifiers

This programming selection allows you to program special keyboard features, such as CTRL+ codes and Turbo Mode.

Control + ASCII Mode On – If you scan this selection, the Cordless System sends key combinations for ASCII control characters for values 00–1F. Refer to page NO TAG for CTRL+ Values.

Turbo Mode – Selecting Turbo Mode On, (for the IBM AT only), programs the Cordless System to send characters to the terminal faster.

Numeric Keypad Mode – Selecting Numeric Keypad Mode On sends numeric characters as if entered from a numeric keypad.

Automatic Direct Connect – When Emulate External Keyboard has been selected (above), Automatic Direct Connect Mode keeps the integrated keyboard from becoming permanently disabled. (This selection disables the keyboard for the duration of the bar code transmission.)

Control + ASCII Mode On

✶ Control + ASCII Mode Off

Turbo Mode On

✶ Turbo Mode Off

Numeric Keypad Mode On

✶ Numeric Keypad Mode Off

Automatic Direct Connect Mode On

✶ Automatic Direct Connect Mode Off

Keyboard & Delays Selections

Output Delays Selection

This selection provides control of the time delays between data output by the Cordless System to the host terminal. The actual delay is 5 milliseconds multiplied by the programmed value (00 – 99). *Default = 00.*

Intercharacter Delay is the time delay between data characters output by the Cordless System to the host terminal.

Interfunction Delay is the time delay between function (key) codes output by the Cordless System to the host terminal.

Intermessage Delay is the time delay between data messages or records output by the Cordless System to the host terminal.

Example: You need a 45 millisecond delay. Scan the ***Intercharacter Delay*** bar code. Then scan "0," "9,"and Save on the Programming Chart (09 x 5ms = 45ms).

Intercharacter Delay (x5mS) ‡

Interfunction Delay (x5mS) ‡

Intermessage Delay (x5mS) ‡

‡ A two-digit number and Save are required after scanning this programming bar code. Refer to the Programming Chart (inside back cover).

Wand Emulation Selections

Transmission Rate Selection

This programming selection sets the transmission rate from 10 ips (inches per second) to 300 ips if the Cordless System is in Wand Emulation mode. Programming the transmission rate causes the data to be sent at the specified rate. The programmed transmission rate must be compatible with the device receiving the bar code data.

10

✶ 25

40

80

120

150

200

300

Output Polarity Selection

This selection allows you to set the output logic convention for the digital output. The choices are White High (“Laser” output) and Black High.

White High

✶ Black High

Laser & Reset Selections

Reset Factory Settings

Scanning the ***Factory Default Settings*** bar code resets the Cordless System to the original factory settings, clearing any programming changes you may have made. You may reset the factory default settings for the current application group or for all application groups. Both selections will set the terminal ID to 03. Scan the correct programming below.

Factory Default Settings: Current Application Group

Factory Default Settings: ALL Application Groups

Section 3

Communications Menu

Introduction

Use this section to program the communications parameters for the Cordless System.

This programming section contains the following menu selections:

- Host Port Communications (RS-232)
- Auxiliary Port Communications (RS-232)

Host Port Communications

✶ *Default All Host Port Communications* ✶

Baud Rate Selection

This selection sets the baud rate from 300 bits per second to 38,400 bits per second. Programming baud rate causes the data to be sent at the specified rate. The host terminal must be set up for the same baud rate as the Cordless System to ensure reliable communication.

300

600

1200

2400

4800

9600

19200

✶ 38400

Host Port Communications

Parity Selection

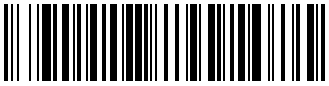
This selection provides a means of checking character bit patterns for validity. The Cordless System can be configured to operate under Even, Odd, Mark, None, or Space parity options. The host terminal must be set up for the same parity as the Cordless System to ensure reliable communication.

✶ None

Space

Mark

Even



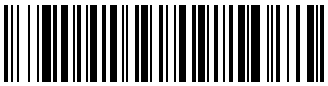
Odd

Word Length Data Bits Selection

This selection sets the Word Length at ***seven or eight bits of data*** per character. If an application requires only ASCII Hex characters 0 through 7F decimal (text, digits, and punctuation), select 7 data bits. For applications requiring use of the full ASCII set, select 8 data bits per character.

7 Data Bits

✶ 8 Data Bits



Host Port Communications

Word Length Stop Bits Selection

This selection sets the Word Length at ***one or two stop bits***.

✶ 1 Stop Bit

2 Stop Bits

Serial Wedge Output Selection

This selection selects the serial output direction required by your application. P1 and P2 are serial wedge designations printed on the serial wedge cable. Usually, one goes to the host and one goes to the terminal, depending on your specific application and the serial wedge cable.

To P1

To P1 and P2

To P2

✶ None (Host Port RS-232)

Host Port Communications

Hardware Flow Control Selection

This selection enables hardware flow control that checks for a CTS signal before sending data. This option is useful when your application supports the CTS signal. ***Note:*** *This selection cannot be used with Serial Wedge Output Selection.*

Enable

✶ Disable

Host Port Communications

Host ACK Selection

This selection programs the Cordless System to wait for a confirmation signal (ACK) from the host after bar code data has been sent. The host system may also be used to generate Escape Commands for user feedback (see section below). Page 1–11 in the Getting Started Section explains how Host ACK works and provides an illustration of the feature.

Note: *Host ACK mode will only work with a host system that supports RTS/CTS flow control. If your host system does not support RTS/CTS handshaking, enabling Host ACK selection will cause some or all of your data to be lost.*

Enable

✶ Disable

Escape Commands

The Cordless System will respond to beep and blink commands from the host system. The format for these commands is:

Esc x (where "x" is one of the Escape commands listed below)

The table below lists the Escape commands that may be generated from the host system and the resulting action(s).

Command	Action
Esc a	Beep/blink LED if successful programming change
Esc b	Beep/blink LED if unsuccessful programming change
Esc 1	Illuminate green LED for 135 milliseconds
Esc 2	Illuminate green LED for 2 seconds
Esc 3	Illuminate green LED for 5 seconds
Esc 4	One beep at low volume
Esc 5	One beep at medium volume
Esc 6	One beep at high volume
Esc 7	Beep/blink LED if successful decode/communication to host
Esc 8	Beep/blink LED if successful decode, unsuccessful communication to host

Auxiliary Port Communications

✶ *Default All Auxiliary Port Communications* ✶

Baud Rate Selection

This selection sets the baud rate from 300 bits per second to 38,400 bits per second. Programming baud rate causes the data to be sent at the specified rate. The device connected to the Auxiliary Port must be set up for the same baud rate as the Aux Port to ensure reliable communication.

300

600

1200

2400

4800

9600

19200

✶ 38400

Auxiliary Port Communications

Parity Selection

This selection provides a means of checking character bit patterns for validity. The Auxiliary Port can be configured to operate under Even, Odd, Mark, None, or Space parity options. The device connected to the Auxiliary Port must be set up for the same parity as the Aux Port to ensure reliable communication.

✶ None

Space

Mark

Even

Odd

Word Length Data Bits Selection

This selection sets the Word Length at ***seven or eight bits of data*** per character. If an application requires only ASCII Hex characters 0 through 7F decimal (text, digits, and punctuation), select 7 data bits. For applications requiring use of the full ASCII set, select 8 data bits per character.

7 Data Bits

✶ 8 Data Bits

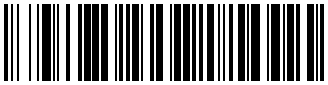
Auxiliary Port Communications

Word Length Stop Bits Selection

This selection sets the Word Length at ***one or two stop bits***.

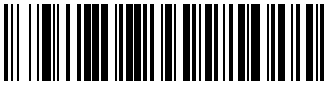
✶ 1 Stop Bit

2 Stop Bits



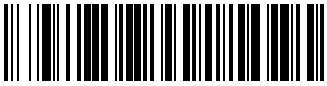
Protocol Selection

This selection programs the Auxiliary Port for the protocol required by the input device to the Auxiliary Port. The protocol is a set of rules concerning the exchange of data between serially communicating devices. The Auxiliary Port supports Record, Burst, and Ack / Nak protocols when receiving data from an RS-232 device.



✶ Record

Burst



Record Ack / Nak

Block Ack / Nak

Aux Port I.D. Transmit Selection

This will attach the Aux Port identifier (which is the letter “r”) to the incoming data at the Auxiliary Port and will send it along with the data to the host device.

Enable

✶ Disable

Auxiliary Port Communications

Hardware Flow Control Selection

This selection enables hardware flow control that checks for a CTS signal before sending data. This option is useful when your application supports the CTS signal.

Enable

✶ Disable

Note: *The Auxiliary Port receive function will only work properly if RTS/CTS or ACK/NAK flow control is used. If your host system does not support RTS/CTS or ACK/NAK handshaking, some or all of your data will be lost.*

Data Character Selection

This selection selects the serial output data characters that may be sent from the RS-232 device connected to the Auxiliary Port.
Default SOR Character = none (NUL: 00).
Default EOR Character = Carriage Return (CR: 0D).
Default SOB Character = none (NUL: 00).
Default EOB Character = End of Text (EOT: 04).

SOR (Start of Record) ‡

EOR (End of Record) ‡

SOB (Start of Block) ‡

EOB (End of Block) ‡

‡ A two-digit number and Save are required after scanning this programming bar code. Refer to the Programming Chart (inside back cover).

Aux Prefix / Suffix Selections

Aux Prefix and Suffix

Aux Prefix and Suffix characters are data characters you may assign to incoming Auxiliary Port data.

Data frame –>	Prefix	Message	Suffix

Characters for the Prefix and Suffix are selected by their hexadecimal ASCII value, up to 12 characters each. Prefix and Suffix characters may be assigned to all incoming data.
Default Prefix (incoming data) = none.
Default Suffix (incoming data) = none.
Default Prefix (outgoing data) = none.
Default Suffix (outgoing data) = Carriage Return (CR).

Programming Steps to Add an Aux Prefix / Suffix to Incoming Data:

❶ To add a Prefix, scan the ***Add Aux Prefix*** programming bar code.
To add a Suffix, scan the ***Add Aux Suffix*** programming bar code.

❷ Scan two bar codes for the Hex Value "72" ("r," which represents the I.D. for the Aux Port). Scan the two digits on the Programming Chart (on the inside back cover of this manual).

❸ Refer to the Hex ASCII Chart (page 3–13) to find the Hex value that represents the ASCII characters you wish to attach to the data. Use the Programming Chart (inside back cover) to scan the alphanumeric combination that represents the ASCII characters.

❹ To complete Aux Prefix / Suffix programming, scan either:

- ***Save Current Changes*** programming bar code. This exits, saving the Prefix / Suffix selections you just assigned.
- ***Discard Current Changes*** programming bar code. This exits without changing the Prefix / Suffix.

Other Programming Selections: Scanning the ***Default Prefix*** or ***Default Suffix*** bar code sets the default Prefix or Suffix (shown above).

Other Programming Selections: Scanning the ***Clear All Prefixes*** or ***Clear All Suffixes*** bar code deletes <u>all</u> Prefix or Suffix selections.

Note: *Aux Prefix / Suffix programming examples may be found on page 3–13.*

Aux Prefix / Suffix Selections

Aux Prefix Selection

Add Aux Prefix ‡

Clear All Prefixes *(default)*

Aux Suffix Selection

Add Aux Suffix ‡

Clear All Suffixes *(default)*

Exit Selection for Aux Prefix / Suffix

Save Current Changes

Discard Current Changes

‡ One or more two-digit numbers and Save are required after scanning this programming bar code. Refer to the Programming Chart (inside back cover).

Aux Prefix / Suffix Selections

Aux Prefix and Suffix Examples

Example 1: Add a Prefix

To add an HT (tab) Prefix to incoming data:

- Scan the ***Add Aux Prefix*** Prefix Selection bar code.
- Scan **7** and **2** on the Programming Chart (inside back cover).
- An "HT" is equivalent to "09" (see the Hex ASCII Chart). Scan **0** and **9** on the Programming Chart.
- Scan the ***Save Current Changes*** Exit Selection bar code.

Example 2: Add a Suffix

To add a CR (carriage return) Suffix to incoming data:

- Scan the ***Add Aux Suffix*** Suffix Selection bar code.
- Scan **7** and **2** on the Programming Chart (inside back cover).
- A "CR" is equivalent to "0D" (see the Hex ASCII Chart). Scan **0** and **D** on the Programming Chart.
- Scan the ***Save Current Changes*** Exit Selection bar code.

Hex to ASCII Conversion Chart

ASCII	Hex	ASCII	Hex	ASCII	Hex	ASCII	Hex	ASCII	Hex	ASCII	Hex	ASCII	Hex	ASCII	Hex
NUL	00	DLE	10	SP	20	0	30	@	40	P	50	‘	60	p	70
SOH	01	DC1	11	!	21	1	31	A	41	Q	51	a	61	q	71
STX	02	DC2	12	”	22	2	32	B	42	R	52	b	62	r	72
ETX	03	DC3	13	#	23	3	33	C	43	S	53	c	63	s	73
EOT	04	DC4	14	$	24	4	34	D	44	T	54	d	64	t	74
ENQ	05	NAK	15	%	25	5	35	E	45	U	55	e	65	u	75
ACK	06	SYN	16	&	26	6	36	F	46	V	56	f	66	v	76
BEL	07	ETB	17	’	27	7	37	G	47	W	57	g	67	w	77
BS	08	CAN	18	(	28	8	38	H	48	X	58	h	68	x	78
HT	09	EM	19	)	29	9	39	I	49	Y	59	i	69	y	79
LF	0A	SUB	1A	*	2A	:	3A	J	4A	Z	5A	j	6A	z	7A
VT	0B	ESC	1B	+	2B	;	3B	K	4B	[	5B	k	6B	{	7B
FF	0C	FS	1C	,	2C	<	3C	L	4C	\	5C	l	6C	|	7C
CR	0D	GS	1D	–	2D	=	3D	M	4D	]	5D	m	6D	}	7D
SO	0E	RS	1E	.	2E	>	3E	N	4E	^	5E	n	6E	~	7E
SI	0F	US	1F	/	2F	?	3F	O	4F	_	5F	o	6F	DEL	7F

Aux Data Formatter Selections

Aux Data Format Editor

This selection provides editing of all incoming data to the Auxiliary Port. Scanning the ***Default Data Format*** bar code will program the Cordless System to the default Data Format, which is none. Be **certain** you want to delete or clear all formats before you scan the ***Default Data Format*** bar code. *Default Data Format = none.*

To make Data Format Editor selections, you must know the terminal type, code length, and editor commands your application requires. Use the Alphanumeric bar codes (inside back cover) to scan these options.

Use the Aux Data Format Editor by following the steps below:

❶ Scan the ***Enter Aux Data Format*** bar code to start Format Editor selection.

❷ **Terminal Type**
Scan two bar codes that represent the terminal type of the data's destination (00-99†, see page 2–4 for Terminal I.D. list.)

❸ **Code I.D.**
Scan two bar codes for the Hex Value "72" ("r," which represents the I.D. for the Aux Port).

❹ **Length**
Scan four numeric bar codes (inside back cover) for the bar code length you require (0000-9999‡). Be sure to include spaces.

❺ **Editor Command Sequences**
Refer to the Format Editor Commands chart (page 3–16). Scan two bar codes that represent the command you need.

❻ **End Data Format Editor**
Scan ***Save Current Changes*** to end Data Format Editor programming.

† 99 is the universal terminal type, indicating all terminal types.
‡ 9999 is the universal length, indicating all bar code lengths.

Other Programming Selections: You may also save or discard your Data Format changes, by scanning either:

- ***Clear One Data Format*** programming bar code. This deletes Data Format selections. Scan the Terminal I.D., 7 and 2, and the length of the format you want to delete. All other formats are unaffected.
- ***Save Current Changes*** programming bar code. This exits, saving the Data Format selections you just assigned.
- ***Discard Current Changes*** programming bar code. This exits without changing the Data Format selections.

Aux Data Formatter Selections

Aux Data Formatter

When Data Formatter is disabled, the incoming data will be output to the host as received (including prefixes and suffixes).

✶ Enable

Disable

Aux Require Data Format?

When Data Formatter is required, all input data must conform to an edited format or the Cordless System will not transmit the input data to the host device.

Require

✶ Don't Require

Aux Data Format Editor

See pages 3–14 and 3–16 through 3–17 for a description of this selection, commands, and examples.

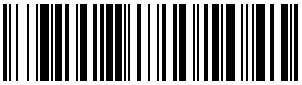
✶ Default Data Format *(none)*

Enter Aux Data Format ‡

Clear One Data Format ‡

Save Current Changes

Discard Current Changes



‡ One or more two-digit numbers and Save are required after scanning this programming bar code. Refer to the Programming Chart (inside back cover).

Aux Data Formatter Selections

Aux Format Editor Commands Chart

Send Commands

F1 Send all characters followed by "XX" key or function code, starting from current cursor position. ***Syntax = F1XX*** *(XX = HEX ASCII character or function code 00–7F HEX).*

F2 Send "NN" characters followed by "XX" key or function code, starting from current cursor position. ***Syntax = F2NNXX*** *(NN = number of characters 00–99 DEC, XX = HEX ASCII character or function code 00–7F HEX).*

F3 Send up to but not including "SS" character (Search and Send) starting from current cursor position, leaving cursor pointing to "SS" character followed by "XX" key or function code. ***Syntax = F3SSXX*** *(SS = HEX ASCII Character 00–7F HEX, XX = HEX ASCII character 00–7F HEX).*

F4 Send "XX" character "NN" times (Insert) leaving cursor in current cursor position. ***Syntax = F4XXNN*** *(XX = HEX ASCII character 00–7F HEX, NN = number of characters 00–99 DEC).*

Move Commands

F5 Move cursor ahead "NN" characters from current cursor position. ***Syntax = F5NN*** *(NN = number of characters 00–99 DEC).*

F6 Move cursor back "NN" characters from current cursor position. ***Syntax = F6NN*** *(NN = number of characters 00–99 DEC).*

F7 Move cursor to the beginning of the data string. ***Syntax = F7***.

Search Commands

F8 Search ahead for "XX" character from current cursor position, leaving cursor pointing to "XX" character. ***Syntax = F8XX*** *(XX = HEX ASCII character 00–7F).*

F9 Search back for "XX" character from current cursor position, leaving cursor pointing to "XX" character. ***Syntax = F9XX*** *(XX = HEX ASCII character 00–7F).*

Miscellaneous Commands

FA Leading zero suppress on. Suppress leading zeroes from current cursor position until first non–zero character. ***Syntax = FA***.

FB Suppress "XX" character(s) (up to three) starting from current cursor position until suppress disable command "FC" or end of format. ***Syntax = FBXXFB, FBXXXXFB, FBXXXXXXFB*** *(XX = ASCII character 00–7F).*

FC Disable suppress filter and clear all suppressed characters. ***Syntax = FC***.

FE Compare character in current cursor position to the character "XX." If characters are equal, increment cursor. If characters are not equal, no format match. ***Syntax = FEXX*** *(XX = HEX ASCII character 00 –7F).*

Aux Data Formatter Selections

Aux Data Formatter Example

You are sending five digit data into the Auxiliary Port; however, your host system can only accept data which has eight digits. You must add three zeroes to the beginning of the Aux Port data.

Received	Must send
12345	00012345

Refer to the Aux Format Editor Commands Chart on page 3–16 to format the following example. The programming bar codes on page 3–15, and the alphanumeric bar codes on the inside back cover are used to program the data formatter.

- Scan the ***Enter Aux Data Format*** bar code (page 3–15).
- Scan the ***99*** bar codes for Universal Terminal Type.
- Scan the ***72*** bar codes, the Hex value for the Auxiliary Port.
- Scan the ***0005*** bar codes for the data length.

The following are the Aux Editor Command Sequences:

- Scan the ***F4*** (send XX character NN times command) bar codes, scan ***30*** bar codes (the Hex value for a zero), scan ***03*** bar codes (send three times).
- Scan the ***F1*** and ***00*** bar codes to send all data followed by a NUL (NUL= 00 in Hex value).
- Scan the ***Save*** bar code to end Aux Format Editor selection.

Notes...

Notes:
The space below may be used for notes. ...

Introduction

Use this section to program parameters for application work groups for the Cordless System.

This programming section contains the following menu selections:

- Output Selections (User Feedback)
- Prefix and Suffix
- Data Formatter

When you set up and connect the Cordless System to your host system, you associate the Cordless Scanner to its Base unit. If you are using more than one Cordless Scanner, you may also set up application work groups. (Instructions for associating more scanners – up to nine – to the Base are on page 1–7.)

Application work groups may be set up in different configurations using the programming selections found in this section of the manual. For example, one group may need the beeper turned off, will only scan Code 39 bar codes, and needs a carriage return suffix added to the data being sent to the host system via the Base. Another group may require that scanner voting be enabled, will scan UPC A, and needs a space added to the transmitted data, between the main UPC bar code data and the five digit addenda.

The Application Work Groups Selection (on the next page) sets up the application work group(s). After you've scanned the association bar code on the Base, scan one of the work group numbers to assign the Cordless Scanner to a specific group. You may then program whatever parameters your application requires from the Output (User Feedback), Prefix and Suffix, and Data Formatter Selections menu pages.

To add a new Cordless Scanner to an established group, associate the scanner to the Base and scan the application work group number. The scanner will operate and send data to the host system according to that group's programmed selections. Any programming selections you change or make with one Cordless Scanner will affect all the scanners in a work group.

Note: *To program a group's parameters, you must first scan the group number and then the programming selections (prefix, suffix, data formatter, etc.). The parameters can't be programmed first and then "made" a group by scanning an application work group number.*

To remove a scanner associated with a Base unit, use the Remove Scanner Selection on page 4–3. For instance, if nine scanners are associated with a Base (the maximum number) and you want to add a new scanner, you will need to remove one scanner from the established work groups. After removing one scanner by using the Remove Scanner programming bar code, add the new scanner by scanning the association bar code on the Base unit.

Output Selections

Application Work Group Selection

This programming selection sets up application work groups sharing specific programming settings (such as Beeper Volume, Scanner Voting, Prefix / Suffix, and Data Formatter). Scan the group number and then program the selections your application requires. (Refer to the introduction, page 4–1, for more information on application work groups.)

✶ Group 0

Group 1

Group 2

Group 3

Group 4

Group 5

Group 6

Group 7

Group 8

Output Selections

Remove Scanner Selection

This programming selection removes a scanner from an associated Base unit.

Remove Scanner

Beeper Volume Selection

Off

Low

Medium

✶ High

Scanner Voting Selection

When Scanner Voting is enabled, the Cordless System requires three (3) identical, consecutive scans before the bar code data will be accepted and transmitted to the terminal. When this selection is disabled, the bar code data will be transmitted following one (1) valid scan.

Enable

✶ Disable

Output Selections

Laser Marker Beam

When enabled, the Cordless Scanner shows a marker or locator beam before the red scan line opens across a bar code and the scanning process begins. The marker beam, emitted by centering the optical scan mirror, appears as a bright spot of illumination that serves as an aiming guide when bar code targets are at a distance from the scanner. ***Note:****Applies only to the 5770LR product. If this selection is enabled on non-5770LR products, the scan rate is diminished.*

Enable

✶ Disable

AIM I.D. Transmit Selection

This selection enables or disables transmission of an AIM I.D. before the decoded bar code symbology. (The Symbology Chart on page 4–8 shows the single AIM† character code that identifies each symbology. For more information, see AIM Guidelines on Symbology Identifiers.)

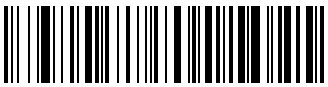
Enable

✶ Disable

† Automatic Identification Manufacturers Inc., a trade association, located at 634 Alpha Drive, Pittsburg, PA 15238–2802.

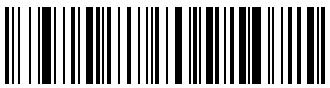
Welch Allyn Code I.D. Transmit Selection

This selection enables or disables transmission of a Welch Allyn Code I.D. before the decoded bar code symbology. (See the Symbology Chart on page 4–8 for the single character code that identifies each symbology.)



Enable

✶ Disable



Prefix / Suffix Selections

Prefix and Suffix

The Cordless System transmits a decoded message after every successful bar code read. Prefix and Suffix characters are data characters you may assign to be sent before and after the transmitted bar code data.

Transmitted data frame –>	Prefix	Bar Code Message	Suffix

Characters for the Prefix and Suffix are selected by their hexadecimal ASCII value, up to 12 characters each. Prefix and Suffix characters may be sent for a specific symbology, or may be sent with all bar code scans.
Default Prefix = none.
Default Suffix = Carriage Return (CR: 0D).

Programming Steps to Add a Prefix / Suffix:

❶ To add a Prefix, scan the ***Add Prefix*** programming bar code.
To add a Suffix, scan the ***Add Suffix*** programming bar code.

❷ Refer to the Symbology Chart (page 4–8) to find the Hex value that represents the symbology(s) you want transmitted with one or more Prefixes or Suffixes. Scan the two digits on the Programming Chart (on the inside of the back cover of this manual).

❸ Refer to the Hex ASCII Chart (page 4–8) to find the Hex value that represents the ASCII characters you wish to transmit with the bar code data. Use the Programming Chart (inside back cover) to scan the alphanumeric combination that represents the ASCII characters.

❹ To complete Prefix / Suffix programming, scan either:
- ***Save Current Changes*** programming bar code. This exits, saving the Prefix / Suffix selections you just assigned.
- ***Discard Current Changes*** programming bar code. This exits without changing the Prefix / Suffix.

Programming Steps to Clear (or Delete) One or All Prefix / Suffix Entry:

❶ To clear all the Prefix entries for a specific symbology, scan the ***Clear One Prefix*** programming bar code.
To clear all the Suffix entries for a specific symbology, scan the ***Clear One Suffix*** programming bar code.

❷ Refer to the Symbology Chart to find the Hex value representing the symbology's entry you want cleared. Scan the two digits on the Programming Chart (on the inside of the back cover of this menu).

❸ Scan ***Save Current Changes*** or ***Discard Current Changes*** programming bar codes to complete programming.

Other Programming Selections: Scanning the ***Default Prefix*** or ***Default Suffix*** bar code sets the default Prefix or Suffix (shown above).

Other Programming Selections: Scanning the ***Clear All Prefixes*** or ***Clear All Suffixes*** bar code deletes <u>all</u> Prefix or Suffix selections.

Note: *Prefix / Suffix programming examples may be found on page 4–7.*

Prefix / Suffix Selections

Prefix Selection

Add Prefix ‡

Default Prefix *(none)*

Clear One Prefix ‡

Clear All Prefixes

Suffix Selection

Add Suffix ‡

Default Suffix *(CR)*

Clear One Suffix ‡

Clear All Suffixes

Exit Selection for Prefix / Suffix

Save Current Changes

Discard Current Changes

‡ One or more two-digit numbers and Save are required after scanning this programming bar code. Refer to the Programming Chart (inside back cover).

Prefix / Suffix Selections

Prefix and Suffix Examples

Example 1: Add Suffix for Specific Symbology

To send a CR (carriage return) Suffix for UPC only.

- Scan the ***Add Suffix*** Suffix Selection bar code.
- The Symbology Chart indicates that the Hex value of UPC is “63”. Scan **6** and **3** on the Programming Chart (inside back cover).
- A “CR” is equivalent to “0D” (see the Hex ASCII Chart). Scan **0** and **D** on the Programming Chart.
- Scan the ***Save Current Changes*** Exit Selection bar code.

Example 2: Add Suffix for *ALL* Symbologies

To send a CR (carriage return) Suffix for all symbologies.

- Scan the ***Add Suffix*** Suffix Selection bar code.
- The Symbology Chart indicates that the Hex value for All Symbologies is “99”. Scan **9** and **9** on the Programming Chart.
- A “CR” is equivalent to “0D”. Scan **0** and **D** on the Programming Chart.
- Scan the ***Save Current Changes*** Exit Selection bar code.

Example 3: Add Prefix for Specific Symbology / Suffix for *ALL* Symbologies

To send an HT (tab) Prefix for UPC only and a CR / LF (carriage return / line feed) Suffix for all symbologies.

- Scan the ***Add Prefix*** Prefix Selection bar code.
- The Symbology Chart indicates that the Hex value of UPC is “63”. Scan **6** and **3** on the Programming Chart.
- An “HT” is equivalent to “09”. Scan **0** and **9** on the Programming Chart.
- Scan the ***Add Suffix*** Suffix Selection bar code.
- The Symbology Chart indicates that the Hex value for All Symbologies is “99”. Scan **9** and **9** on the Programming Chart.
- A “CR” is equivalent to “0D” and an “LF” is “0A”. Scan **0**, **D**, **0**, and **A** on the Programming Chart.
- Scan the ***Save Current Changes*** Exit Selection bar code.

Example 4: To Clear a Specific Prefix Entry

The Cordless System is programmed to send a CR / LF (carriage return / line feed) Prefix for all symbologies (Hex value, 99). This is one Prefix entry. You’ve also programmed a “#” Prefix for UPC (Hex, 63). To clear the UPC entry, but not the Prefix entry for all symbologies.

- Scan the ***Clear Specific Prefix*** Prefix Selection bar code.
- The Symbology Chart indicates that the Hex value for UPC is “63”. Scan **6** and **3** on the Programming Chart.
- Scan the ***Save Current Changes*** Exit Selection bar code.

Prefix / Suffix Selections

Symbology Chart							
Symbology	**AIM ID**	**Code ID**	**Hex Value**	**Symbology**	**AIM ID**	**Code ID**	**Hex Value**
Codabar	]F0	a	61	Code 11	]H0	h	68
Code 39	]A0	b	62	Code 93	]G0	i	69
UPC	]E0	c	63	Code 128	]C0	j	6A
EAN	]E0	d	64	Matrix 2 of 5	]X0	m	6D
Interleaved 2 of 5	]I0	e	65	*All Symbologies*			99
Code 2 of 5	]S0	f	66	*(Prefix/Suffix Programming **only**.)*			

Hex to ASCII Conversion Chart															
ASCII	**Hex**	**ASCII**	**Hex**	**ASCII**	**Hex**	**ASCII**	**Hex**	**ASCII**	**Hex**	**ASCII**	**Hex**	**ASCII**	**Hex**	**ASCII**	**Hex**
NUL	**00**	**DLE**	**10**	**SP**	**20**	**0**	**30**	**@**	**40**	**P**	**50**	**‘**	**60**	**p**	**70**
SOH	**01**	**DC1**	**11**	**!**	**21**	**1**	**31**	**A**	**41**	**Q**	**51**	**a**	**61**	**q**	**71**
STX	**02**	**DC2**	**12**	**”**	**22**	**2**	**32**	**B**	**42**	**R**	**52**	**b**	**62**	**r**	**72**
ETX	**03**	**DC3**	**13**	**#**	**23**	**3**	**33**	**C**	**43**	**S**	**53**	**c**	**63**	**s**	**73**
EOT	**04**	**DC4**	**14**	**$**	**24**	**4**	**34**	**D**	**44**	**T**	**54**	**d**	**64**	**t**	**74**
ENQ	**05**	**NAK**	**15**	**%**	**25**	**5**	**35**	**E**	**45**	**U**	**55**	**e**	**65**	**u**	**75**
ACK	**06**	**SYN**	**16**	**&**	**26**	**6**	**36**	**F**	**46**	**V**	**56**	**f**	**66**	**v**	**76**
BEL	**07**	**ETB**	**17**	**’**	**27**	**7**	**37**	**G**	**47**	**W**	**57**	**g**	**67**	**w**	**77**
BS	**08**	**CAN**	**18**	**(**	**28**	**8**	**38**	**H**	**48**	**X**	**58**	**h**	**68**	**x**	**78**
HT	**09**	**EM**	**19**	**)**	**29**	**9**	**39**	**I**	**49**	**Y**	**59**	**i**	**69**	**y**	**79**
LF	**0A**	**SUB**	**1A**	*****	**2A**	**:**	**3A**	**J**	**4A**	**Z**	**5A**	**j**	**6A**	**z**	**7A**
VT	**0B**	**ESC**	**1B**	**+**	**2B**	**;**	**3B**	**K**	**4B**	**[**	**5B**	**k**	**6B**	**{**	**7B**
FF	**0C**	**FS**	**1C**	**,**	**2C**	**<**	**3C**	**L**	**4C**	****	**5C**	**l**	**6C**	**|**	**7C**
CR	**0D**	**GS**	**1D**	**–**	**2D**	**=**	**3D**	**M**	**4D**	**]**	**5D**	**m**	**6D**	**}**	**7D**
SO	**0E**	**RS**	**1E**	**.**	**2E**	**>**	**3E**	**N**	**4E**	**^**	**5E**	**n**	**6E**	**~**	**7E**
SI	**0F**	**US**	**1F**	**/**	**2F**	**?**	**3F**	**O**	**4F**	**_**	**5F**	**o**	**6F**	**DEL**	**7F**

Note: *Prefix / Suffix entries for specific symbologies override the universal (All Symbologies, 99) entry.*

Data Formatter Selections

Data Format Editor

This selection provides editing of all input (scanned) data. All Industrial and Retail symbologies can be formatted. Scanning the ***Default Data Format*** bar code will program the Cordless System to the default Data Format, which is none. Be **certain** you want to delete or clear all formats before you scan the ***Default Data Format*** bar code. *Default Data Format = none.*

To make Data Format Editor selections, you must know the terminal type, code I.D., code length, and editor commands your application requires. Use the Alphanumeric bar codes (inside back cover) to scan these options.

Use the Data Format Editor by following the steps below:

❶ Scan the ***Enter Data Format*** bar code to start Format Editor selection.

❷ **Terminal Type**
Scan two bar codes that represent the terminal type (00-99†, see page 2–4 for Terminal I.D. list.)

❸ **Code I.D.**
Refer to the Symbology chart (page 4–8), then scan two bar codes from the "Hex Value" column that represent the Code I.D. of the symbology you want formatted. ("All Symbologies" – hex value 99 – is not supported by Data Formatter.)

❹ **Length**
Scan four numeric bar codes (inside back cover) for the bar code length you require (0000-9999‡). Be sure to include spaces.

❺ **Editor Command Sequences**
Refer to the Format Editor Commands chart (page 4–11). Scan two bar codes that represent the command you need.

❻ **End Data Format Editor**
Scan ***Save Current Changes*** to end Data Format Editor programming.

† 99 is the universal terminal type, indicating all terminal types.
‡ 9999 is the universal length, indicating all bar code lengths.

Other Programming Selections: You may also clear, save or discard your Data Format changes, by scanning either:

- ***Clear One Data Format*** programming bar code. This deletes Data Format selections. Scan the Terminal I.D., Code I.D. and the length of the format you want to delete. All other formats are unaffected.
- ***Clear All Data Formats*** programming bar code. This deletes all Data Format selections.
- ***Save Current Changes*** programming bar code. This exits, saving the Data Format selections you just assigned.
- ***Discard Current Changes*** programming bar code, found on the Programming Chart (inside back cover). This exits without changing the Data Format selections.

Data Formatter Selections

Data Formatter

When Data Formatter is disabled, the bar code data will be output to the host as read (including prefixes and suffixes).

✶ Enable

Disable

Require Data Format?

When Data Formatter is required, all input data must conform to an edited format or the Cordless System will not transmit the input data to the host device.

Require

✶ Don't Require

Data Format Editor

See pages 4–9 and 4–11 through 4–12 for a description of this selection, commands, and examples.

✶ Default Data Format *(none)*

Enter Data Format ‡

Clear One Data Format ‡

Save Current Changes

Clear All Data Formats

‡ One or more two-digit numbers and Save are required after scanning this programming bar code. Refer to the Programming Chart (inside back cover).

Data Formatter Selections

Format Editor Commands Chart

Send Commands

F1 Send all characters followed by "XX" key or function code, starting from current cursor position. ***Syntax = F1XX*** *(XX = HEX ASCII character or function code 00–7F HEX).*

F2 Send "NN" characters followed by "XX" key or function code, starting from current cursor position. ***Syntax = F2NNXX*** *(NN = number of characters 00–99 DEC, XX = HEX ASCII character or function code 00–7F HEX).*

F3 Send up to but not including "SS" character (Search and Send) starting from current cursor position, leaving cursor pointing to "SS" character followed by "XX" key or function code. ***Syntax = F3SSXX*** *(SS = HEX ASCII Character 00–7F HEX, XX = HEX ASCII character 00–7F HEX).*

F4 Send "XX" character "NN" times (Insert) leaving cursor in current cursor position. ***Syntax = F4XXNN*** *(XX = HEX ASCII character 00–7F HEX, NN = number of characters 00–99 DEC).*

Move Commands

F5 Move cursor ahead "NN" characters from current cursor position. ***Syntax = F5NN*** *(NN = number of characters 00–99 DEC).*

F6 Move cursor back "NN" characters from current cursor position. ***Syntax = F6NN*** *(NN = number of characters 00–99 DEC).*

F7 Move cursor to the beginning of the data string. ***Syntax = F7.***

Search Commands

F8 Search ahead for "XX" character from current cursor position, leaving cursor pointing to "XX" character. ***Syntax = F8XX*** *(XX = HEX ASCII character 00–7F).*

F9 Search back for "XX" character from current cursor position, leaving cursor pointing to "XX" character. ***Syntax = F9XX*** *(XX = HEX ASCII character 00–7F).*

Miscellaneous Commands

FA Leading zero suppress on. Suppress leading zeroes from current cursor position until first non–zero character. ***Syntax = FA.***

FB Suppress "XX" character(s) (up to three) starting from current cursor position until suppress disable command "FC" or end of format. ***Syntax = FBXXFB, FBXXXXFB, FBXXXXXXFB*** *(XX = ASCII character 00–7F).*

FC Disable suppress filter and clear all suppressed characters. ***Syntax = FC.***

FE Compare character in current cursor position to the character "XX." If characters are equal, increment cursor. If characters are not equal, no format match. ***Syntax = FEXX*** *(XX = HEX ASCII character 00 –7F).*

Data Formatter Selections

Data Formatter Example

You are using an IBM PC AT and are scanning a UPC A bar code with a five digit addenda (shown below). The bar code has a total of 18 characters, including the number system, the check digits, and a space between the main bar code data and the addenda bar code data.

UPC A with 5 digit addenda

For your application, you don't want the space between the main bar code data and the addenda bar code data transmitted. You also want the bar code data followed by a carriage return (CR).

Refer to the Format Editor Commands Chart on page 4–11 to format the following example. The programming bar codes on page 4–10, and the alphanumeric bar codes on the inside back cover are used to program the data formatter.

- Scan the ***Enter Data Format*** bar code (page 4–10).
- Scan the ***03*** bar codes for PC AT Terminal Type.
- Scan the ***63*** bar codes, the Hex value for UPC symbology.
- Scan the ***0018*** bar codes for the bar code length.

The following are the Editor Command Sequences:

- Scan the ***FB*** (suppress characters command) bar codes, scan ***20*** (the Hex value for a space), and then scan ***FB*** to frame (complete) the command.
- Scan the ***F7*** bar codes to move the cursor back to the beginning of the bar code data.
- Scan the ***F1*** and ***0D*** bar codes to send all the characters followed by a carriage return (CR= 0D in Hex value).
- Scan the ***Save*** bar code to end Format Editor selection.

Introduction

Use this section to program the Cordless System for Industrial and Retail Symbology selections.

This programming section contains the following menu selections:

- Codabar
- Code 39
- Code 93
- Interleaved 2 of 5
- Code 2 of 5
- Matrix 2 of 5
- Code 11
- Code128
- EAN
- UPC

Programming Tip: If a symbology will not be used, we recommend turning it off to maximize the Cordless System's decoding speed.

Industrial Symbology Selections

✶ *Default All Codabar Settings* ✶

Codabar Selection

✶ On

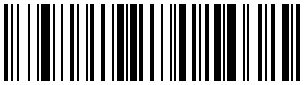
Codabar

Off

Transmit

Start / Stop Characters

✶ Don't Transmit



Minimum ‡

Message Length

Maximum ‡

‡ A two-digit number and Save are required after scanning this programming bar code. Refer to the Programming Chart (inside back cover).

Industrial Symbology Selections

Codabar Selection, *continued*

Validate *Check Character* ✶ Don't Validate

Transmit *Check Character* ✶ Don't Transmit

Concatenation

Codabar supports symbol concatenation. When you ***Enable*** concatenation, the reader will look for a Codabar symbol having a "D" start character, adjacent to a symbol having a "D" stop character. In this case the two messages are concatenated into one with the "D" characters omitted.

Codabar

Select ***Require*** to prevent the reader from decoding a lone Codabar symbol.

✶ Enable *Concatenation* Disable

Require *Concatenation* ✶ Don't Require

Industrial Symbology Selections

✶ *Default All Code 39 Settings* ✶

Code 39 Selection

✶ On

Code 39

Off

Transmit

Start / Stop Characters

✶ Don't Transmit

Minimum ‡

Message Length

Maximum ‡

Validate

Check Character

✶ Don't Validate

Transmit

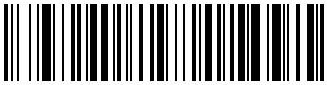
Check Character

✶ Don't Transmit

‡ A two-digit number and Save are required after scanning this programming bar code. Refer to the Programming Chart (inside back cover).

Industrial Symbology Selections

Code 39 Selection, *continued*



✶ Enable

Full ASCII

Disable

Enable

Append

✶ Disable

FULL ASCII CHART †

NUL	%U	DLE	$P	SP	SPACE	0	0	@	%V	P	P	‘	%W	p	+P
SOH	$A	DC1	$Q	!	/A	1	1	A	A	Q	Q	a	+A	q	+Q
STX	$B	DC2	$R	”	/B	2	2	B	B	R	R	b	+B	r	+R
ETX	$C	DC3	$S	#	/C	3	3	C	C	S	S	c	+C	s	+S
EOT	$D	DC4	$T	$	/D	4	4	D	D	T	T	d	+D	t	+T
ENQ	$E	NAK	$U	%	/E	5	5	E	E	U	U	e	+E	u	+U
ACK	$F	SYN	$V	&	/F	6	6	F	F	V	V	f	+F	v	+V
BEL	$G	ETB	$W	’	/G	7	7	G	G	W	W	g	+G	w	+W
BS	$H	CAN	$X	(	/H	8	8	H	H	X	X	h	+H	x	+X
HT	$I	EM	$Y	)	/I	9	9	I	I	Y	Y	i	+I	y	+Y
LF	$J	SUB	$Z	*	/J	:	/Z	J	J	Z	Z	j	+J	z	+Z
VT	$K	ESC	%A	+	/K	;	%F	K	K	[	%K	k	+K	{	%P
FF	$L	FS	%B	,	/L	<	%G	L	L	\	%L	l	+L	|	%Q
CR	$M	GS	%C	–	–	=	%H	M	M	]	%M	m	+M	}	%R
SO	$N	RS	%D	.	.	>	%I	N	N	^	%N	n	+N	~	%S
SI	$O	US	%E	/	/O	?	%J	O	O	_	%O	o	+O	DEL	%T

† This chart is used for encoding the above characters in Full ASCII when using Code 39 bar codes. For example, to get a “<”, encode %G into the bar code symbol.

Industrial Symbology Selections

✶ *Default All Code 93 Settings* ✶

Code 93 Selection

✶ On

Code 93

Off

Minimum ‡

Message Length

Maximum ‡

‡ A two-digit number and Save are required after scanning this programming bar code. Refer to the Programming Chart (inside back cover).

Industrial Symbology Selections

✶ *Default All Interleaved 2 of 5 Settings* ✶

Interleaved 2 of 5 Selection

✶ On

Interleaved 2 of 5

Off

Minimum ‡

Message Length

Maximum ‡

Validate

Check Digit

✶ Don't Validate

Transmit

Check Digit

✶ Don't Transmit

Enable

Lengths of 6, 14 or 16

✶ Disable

‡ A two-digit number and Save are required after scanning this programming bar code. Refer to the Programming Chart (inside back cover).

Industrial Symbology Selections

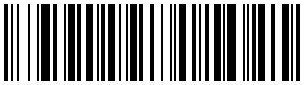
✶ *Default All Code 2 of 5 /Matrix Settings* ✶

Code 2 of 5 Selection

✶ On

Code 2 of 5

Off



Minimum ‡

Message Length

Maximum ‡

Matrix 2 of 5 Selection

✶ On

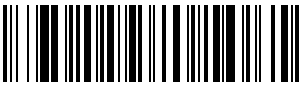
Matrix 2 of 5

Off

Minimum ‡

Message Length

Maximum ‡



‡ A two-digit number and Save are required after scanning this programming bar code. Refer to the Programming Chart (inside back cover).

Industrial Symbology Selections

✶ *Default All Code 11 / Code 128 Settings* ✶

Code 11 Selection

✶ On

Code 11

Off

✶ 2 Check Digits

Check Digits Required

1 Check Digit

Minimum ‡

Message Length

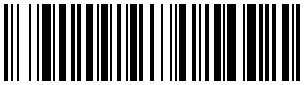
Maximum ‡

Code 128 Selection

✶ On

Code 128

Off



Minimum ‡

Message Length

Maximum ‡

‡ A two-digit number and Save are required after scanning this programming bar code. Refer to the Programming Chart (inside back cover).

Retail Symbology Selections

✶ *Default All EAN / JAN 8 Settings* ✶

✶ *Default All EAN / JAN 13 Settings* ✶

EAN / JAN 8 / 13 Selection

✶ On

EAN / JAN 8

Off

✶ On

EAN / JAN 13

Off

✶ Transmit

Check Digit

Don't Transmit

Retail Symbology Selections

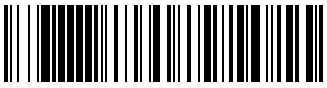
✶ *Default All UPC A Settings* ✶

UPC A Selection

✶ On

UPC A

Off



✶ Transmit

Check Digit

Don't Transmit

✶ Transmit

Number System

Don't Transmit

Retail Symbology Selections

✶ *Default All UPC E0 Settings* ✶

UPC E0 Selection

✶ On

UPC E0

Off

✶ Transmit

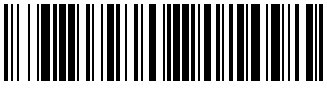
Check Digit

Don't Transmit

✶ Transmit

Number System

Don't Transmit



Expand

Version E Expand

✶ Don't Expand

UPC E1 Selection

On

UPC E1

✶ Off

Retail Symbology Selections

EAN / UPC Addenda Selection

Require

EAN/UPC Addenda

✶ Don't Require

EAN Addenda Selection

Enable

Two Digit Addenda

✶ Disable

Enable

Five Digit Addenda

✶ Disable

UPC Addenda Selection

Enable

Two Digit Addenda

✶ Disable

Enable

Five Digit Addenda

✶ Disable

Notes...

Notes:
The space below may be used for notes. ...

Keyboard Function Relationships

The following Keyboard Function Code, Hex/ASCII Value, and Full ASCII "CTRL"+ relationships apply to all terminals that can be used with the Cordless System.

Function Code	HEX/ASCII Value	Full ASCII "CTRL" +
NUL	00	2
SOH	01	A
STX	02	B
ETX	03	C
EOT	04	D
ENQ	05	E
ACK	06	F
BEL	07	G
BS	08	H
HT	09	I
LF	0A	J
VT	0B	K
FF	0C	L
CR	0D	M
SO	0E	N
SI	0F	O
DLE	10	P
DC1	11	Q
DC2	12	R
DC3	13	S
DC4	14	T
NAK	15	U
SYN	16	V
ETB	17	W
CAN	18	X
EM	19	Y
SUB	1A	Z
ESC	1B	[
FS	1C	\
GS	1D	]
RS	1E	6
US	1F	-

The last five characters in the Full ASCII "CTRL"+ column ([\ ] 6 -), apply to US only. The following chart indicates the equivalents of these five characters for different countries.

Country	Codes				
United States	[	\	]	6	-
Belgium	[	<	]	6	-
Scandinavia	8	<	9	6	-
France	^	8	$	6	=
Germany		Ã	+	6	-
Italy		\	+	6	-
Swiss		<	¨	6	-
United Kingdom	[	´	]	6	-
Denmark	8	\	9	6	-
Norway	8	\	9	6	-
Spain	[	\	]	6	-

Interface Keys

Supported Interface Keys

Supported Interface Keys		IBM AT/XT and PS/2 Compatibles, WYSE PC/AT	IBM XTs and Compatibles	IBM, Telex*
NUL	00	Reserved	Reserved	Reserved
SOH	01	Enter (KP)	CR/Enter	Enter
STX	02	Cap Lock	Caps Lock	F11
ETX	03	ALT make	Reserved	F12
EOT	04	ALT break	Reserved	F13
ENQ	05	CTRL make	Reserved	F14
ACK	06	CTRL break	Reserved	F15
BEL	07	CR/Enter	CR/Enter	New Line
BS	08	Reserved	Reserved	F16
HT	09	Tab	Tab	F17
LF	0A	Reserved	Reserved	F18
VT	0B	Tab	Tab	Tab/Field Forward
FF	0C	Delete	Delete	Delete
CR	0D	CR/Enter	CR/Enter	Field Exit/New Line
SO	0E	Insert	Insert	Insert
SI	0F	Escape	Escape	F19
DLE	10	F11	Reserved	Error Reset
DC1	11	Home	Home	Home
DC2	12	Print	Print	F20
DC3	13	Back Space	Back Space	Back Space
DC4	14	Back Tab	Back Tab	Backfield/Back Tab
NAK	15	F12	Reserved	F21
SYN	16	F1	F1	F1
ETB	17	F2	F2	F2
CAN	18	F3	F3	F3
EM	19	F4	F4	F4
SUB	1A	F5	F5	F5
ESC	1B	F6	F6	F6
FS	1C	F7	F7	F7
GS	1D	F8	F8	F8
RS	1E	F9	F9	F9
US	1F	F10	F10	F10

* Terminal IDs 06, 07, 08 and Telex (all models)

Interface Keys

Supported Interface Keys

Supported Interface Keys		IBM, Telex (102)*	Telex (88)**	DEC VT
NUL	00	Reserved	Reserved	Reserved
SOH	01	Enter	Enter	Enter
STX	02	F11	PF10	PF1
ETX	03	F12	PF11	PF2
EOT	04	F13	PF12	PF3
ENQ	05	F14	Reserved	PF11
ACK	06	F15	Reserved	PF12
BEL	07	New Line	New Line	New Line
BS	08	F16	Field Forward	PF4
HT	09	F17	Field Forward	TAB
LF	0A	F18	Reserved	F13
VT	0B	Tab/Field Forward	Field Forward	F14
FF	0C	Delete	Delete	Remove
CR	0D	Field Exit	New Line	New Line
SO	0E	Insert	Insert	Insert Here
SI	0F	Clear	Erase	Cursor Up
DLE	10	Error Reset	Error Reset	Cursor Left
DC1	11	Home	Reserved	Cursor Down
DC2	12	Print	Print	Cursor Right
DC3	13	Back Space	Back Space	Delete
DC4	14	Back Tab	Back Field	Print
NAK	15	F19	Reserved	F15
SYN	16	F1	PF1	F1
ETB	17	F2	PF2	F2
CAN	18	F3	PF3	F3
EM	19	F4	PF4	F4
SUB	1A	F5	PF5	F5
ESC	1B	F6	PF6	F6
FS	1C	F7	PF7	F7
GS	1D	F8	PF8	F8
RS	1E	F9	PF9	F9
US	1F	F10	Home	F10

* Terminal IDs 06, 07, and 08, Telex (all models) with 102 key keyboards

** Memorex Telex with 88 key keyboards

*** DEC VT 220/320/340/420

Interface Keys

Supported Interface Keys

Supported Interface Keys		Esprit 200, 400 ANSI	Esprit 200, 400 ASCII	Esprit 200, 400 PC
NUL	00	Reserved	Reserved	Reserved
SOH	01	New Line	New Line	New Line
STX	02	N/A	N/A	N/A
ETX	03	N/A	N/A	N/A
EOT	04	N/A	N/A	N/A
ENQ	05	N/A	N/A	N/A
ACK	06	N/A	N/A	N/A
BEL	07	New Line	New Line	New Line
BS	08	N/A	N/A	N/A
HT	09	Tab	Tab	Tab
LF	0A	N/A	N/A	N/A
VT	0B	Tab	Tab	Tab
FF	0C	N/A	N/A	Delete
CR	0D	New Line	New Line	New Line
SO	0E	N/A	N/A	Insert
SI	0F	Escape	Escape	Escape
DLE	10	F11	F11	F11
DC1	11	Insert	Insert	Home
DC2	12	F13	F13	Print
DC3	13	Back Space	Back Space	Back Space
DC4	14	Back Tab	Back Tab	Back Tab
NAK	15	F12	F12	F12
SYN	16	F1	F1	F1
ETB	17	F2	F2	F2
CAN	18	F3	F3	F3
EM	19	F4	F4	F4
SUB	1A	F5	F5	F5
ESC	1B	F6	F6	F6
FS	1C	F7	F7	F7
GS	1D	F8	F8	F8
RS	1E	F9	F9	F9
US	1F	F10	F10	F10

Interface Keys

Supported Interface Keys

Supported Interface Keys		**Bull BDS–7 (Honeywell HDS–7)**
NUL	00	Reserved
SOH	01	Transmit
STX	02	Reserved
ETX	03	Reserved
EOT	04	Reserved
ENQ	05	Backtab
ACK	06	Reserved
BEL	07	Carriage Return
BS	08	Back Space
HT	09	Tab
LF	0A	F11
VT	0B	F12
FF	0C	Delete Character
CR	0D	Carriage Return
SO	0E	Insert
SI	0F	Clear
DLE	10	Error Reset
DC1	11	Home
DC2	12	Delete Line
DC3	13	Erase EOP
DC4	14	Erase EOF
NAK	15	Insert Line
SYN	16	F1
ETB	17	F2
CAN	18	F3
EM	19	F4
SUB	1A	F5
ESC	1B	F6
FS	1C	F7
GS	1D	F8
RS	1E	F9
US	1F	F10

Notes...

Notes:
The space below may be used for notes. ...

SCANTEAM 2070 Cordless Base Product Specifications

Parameter	*Specification*
Dimensions Height Width Length	 1.4 inches (3.6 cm) 4.0 inches (10.2 cm) 4.5 inches (11.5 cm)
Weight	7.25 ounces (206 g) without cable
LED Indicators	One (1)
Beeper	None
Operating Voltage	+4.0 to 14.0 VDC
Power Consumption	325 mA (typical) @ 5 VDC
Noise Immunity	100 mV peak to peak
Temperature Ranges	Operating: –4° F to +122° F (–20° C to +50° C) Storage: –40° F to +158° F (–40° C to +70° C)
Humidity	0 to 95% relative humidity (non-condensing)
Housing Material	GE Cycloloy C2800 or C2950 Standard Flow
Sealing	IP 53 (Water and Dust Resistant)
Mechanical Shock	26 drops from 4 feet (1.2 m) to concrete
ESD Sensitivity	15 kV to any external surface
Reliability	MTBF = 50,000 hours (ground benign)

Radio Specifications

Parameter	*Specification*
Frequency	2.400 to 2.4835 Ghz (ISM Band) Frequency Hopping Carrier
Data Rates	1 Mbps

Specifications

SCANTEAM 3470 Cordless CCD Scanner Product Specifications

Parameter	*Specification*
Dimensions Height Width Length	 8.3 inches (21 cm) (with battery) 3.1 inches (7.8 cm) 4.7 inches (11.9 cm)
Weight	18 ounces (510 g) with battery pack
Light Source	630 to 660 nm Visible Red Light Emitting Diodes (LED)
Print Contrast	Minimum Reflective Difference = 37.5%
Scan Rate	113 scans per second (CCD scan engine)
LED Indicators	Two (2)
Beeper	Yes (volume programmable)
Skew Angle	±30 degrees (from perpendicular)
Pitch Angle	±7 degrees (left/right from perpendicular)
Operating Voltage	+4.3 to 6.0 VDC
Power Consumption	Operating: 400 mA (maximum) @ 4.8 VDC 210 mA (typical) while scanning Standby: 12 mA
Ambient Light	Total darkness to 100,000 Lux (sunlight)
Noise Immunity	100 mV peak to peak
Temperature Ranges	Operating: +32° F to +122° F (–0° C to +50° C) Storage: –22° F to +158° F (–30° C to +70° C)
Humidity	5 to 95% relative humidity (non-condensing)
Altitude	Sea level to 9,900 feet (3000 meters)
Housing Material	GE Cycloloy C2800 or C2950 Standard Flow
Sealing	IP 54 (Water and Dust Resistant)
Mechanical Shock	26 drops from 6 feet (1.8 m) to concrete
ESD Sensitivity	15 kV to any external surface
Reliability	MTBF = ***TBD*** hours (ground benign)

Specifications

SCANTEAM 5770 Cordless Laser Scanner Product Specifications

Parameter	***Specification***
Dimensions Height Width Length	 8.3 inches (21 cm) (with battery) 3.1 inches (7.8 cm) 4.7 inches (11.9 cm)
Weight	18 ounces (510 g) with battery pack
Light Source	630 to 670 nm Visible Laser Diode (VLD)
Scan Rate	34 scans per second (laser scan engine)
Print Contrast	Minimum Reflective Difference = 40%
LED Indicators	Two (2)
Beeper	Yes (volume programmable)
Skew Angle	±65 degrees (from perpendicular): 5770/STD ±60 degrees (from perpendicular): 5770/LR
Pitch Angle	±55 degrees (left/right from perpendicular): 5770/STD ±65 degrees (left/right from perpendicular): 5770/LR
Operating Voltage	+4.3 to 6.0 VDC
Power Consumption	Operating: 400 mA (maximum) @ 4.8 VDC 210 mA (typical) while scanning Standby: 12 mA
Ambient Light	Total darkness to 100,000 Lux (sunlight)
Noise Immunity	100 mV peak to peak
Temperature Ranges	Operating: –4° F to +122° F (–20° C to +50° C) Storage: –22° F to +158° F (–30° C to +70° C)
Humidity	5 to 95% relative humidity (non-condensing)
Altitude	Sea level to 9,900 feet (3000 meters)
Housing Material	GE Cycloloy C2800 or C2950 Standard Flow
Sealing	IP 54 (Water and Dust Resistant)
Mechanical Shock	26 drops from 6 feet (1.8 m) to concrete
ESD Sensitivity	15 kV to any external surface
Reliability	MTBF = ***TBD*** hours (ground benign)

Specifications

Battery Specifications

The battery packs are designed with an integrated charging circuitry to allow them to be plugged directly into any common 120 Volt outlet †. Battery packs have an LED indicator to signal charging and fully-charged conditions. In order to break in the new battery, we suggest that you fully charge and discharge the packs approximately two to four times so they can reach their full-rated capacity.

Parameter	*Specification*	
NiCad (Nickel Cadmium)	**120 Volt/60 hz**	**240 Volt**
Capacity	600 mAh	600 mAh
Number of Scans (between charges)	7,200	7,200
Expected Hours of Operation ‡	12 Hours	12 Hours
Charge Time	8 Hours	4 Hours @ 60 hz 5 Hours @ 50 hz
NiMH (Nickel Metal Hydride)	**120 Volt/60 hz**	**240 Volt**
Capacity	1200 mAh	1200 mAh
Number of Scans (between charges)	14,000	14,000
Expected Hours of Operation ‡	20 Hours	20 Hours
Charge Time for 800 mA/h	4 Hours	4 Hours
Battery Charging (Input) Voltage	85 to 264 VAC @ 47 to 63 hz	

† North America ***only***. All other countries require a Charge Strip (available as an accessory).

‡ Usage Model = one (1) scan every five (5) seconds.

NiCad Battery Pack: Recommended Storage ††

Storage Time	*Storage Temperature*
Up to 6 months	–20° C to 45° C (–4° F to 113° F)
Up to 2 years	–20° C to 35° C (–4° F to 95° F)

NiMH Battery Pack: Recommended Storage ††

Storage Time	*Storage Temperature*
Up to a month	–20° C to 55° C (–4° F to 131° F)
Up to 3 months	–20° C to 45° C (–4° F to 113° F)
Up to a year	–20° C to 35° C (–4° F to 95° F)
Longer than a year	+10° C to 25° C (50° F to 77° F)

†† When storing battery packs for longer than 6 months, recharge at least once a year (once every 6 months if possible) to prevent self–discharge from causing a drop in battery performance or electrolyte leakage.

Specifications

Regulatory and Safety Agency Approvals

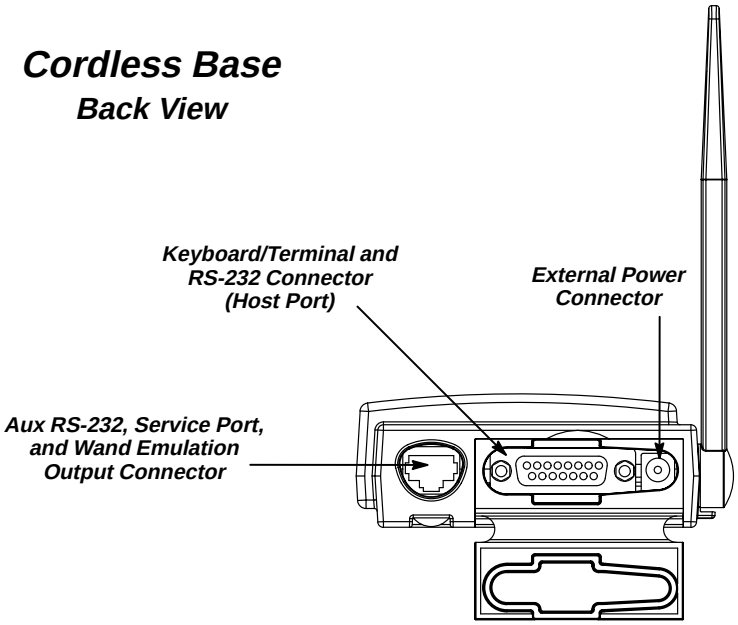
Parameter	*Specification*
Electromagnetic Emissions/Immunity	
U.S.A.	FCC Part 15, Class B – Verified
Canada	SOR 88/475, Class B – Verified
Europe	EN 55022 (CISPR22) Class B EN 61000–3–2 & –3 ETS 300 826 Type Certified
Others:	EMC 89/336/EEC EN 50082–1:1992 IEC 801–2:1991 IEC 801–3:1984 IEC 801–4:1988
Safety	
U.S.A.	UL Listed, C22.2 No. 950 / UL 1950
Canada	cUL Listed
Europe	TÜV Rheinland GS Licensed, EN 60950 (IEC 950)
Mexico	NYCE Certified, NOM 19
RF Approvals	
U.S.A.	FCC Part 15.249 Certified
Canada	RSS 210 Certified
Europe	ETS 300 328 Certified
Mexico	NOM–EM–121–SCT1–1994 Certified

Patents
TBD

Connectors & Pinouts

Cordless Base

Back View

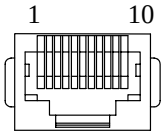


Auxiliary RS-232 / Wand Emulation Connector

The auxiliary RS-232 / scanner connector supports the attachment of an RS-232 input device. The Aux port is compatible with all Welch Allyn contact and non-contact bar code scanners, including bar code contact wands, lasers, and CCDs which operate in RS-232 (TTL and True).

Aux RS-232 Connector: 10 Pin Modular Receptacle

Pin	Signal Name	Description
1	GND	Power/Signal Ground
2	TXD	Transmit Data (output)
3	RXD	Receive Data (input)
4	RTS	Request to Send (output)
5	CTS	Clear to Send (input)
6	VCC	5 Volt DC Power Out
7	WANDEM	TTL Wand Data (output)
8	VIN AUX	Power into Aux
9	VIN FLASH	12V Flash Radio (input)
10	N/C	No connection



Communication Parameters
For Aux RS-232 Port

Start Bit	1
Data Bits	7 or 8
Stop Bits	1 or 2
Parity	None, Mark, Space, Odd, or Even
Baud Rate	300, 600, 1200, 2400, 4800, 9600, 19200, 38400

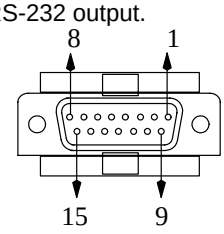
Wand Emulation Mode

When the Base is configured for Wand Emulation (ID 61 or 64), the Aux port will output wandem data on Pin 7 at the selected rates/polarity described on page 2–11 or in the Plug and Play section, page 2–2.

Connectors & Pinouts

Keyboard / Terminal and RS-232 (Host Port) Connector

The cordless Base can output data to keyboard wedge terminals, CRT terminals, and personal computers. The Base also provides direct RS-232 output.



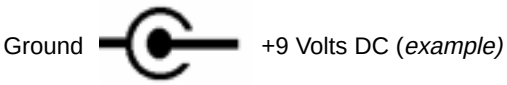
Terminal selection may be programmed using Section 1, the "Plug and Play" or Terminal Interface Selections. Output data can be configured for your application by using the Systems Manual, Sections 2 through 4 (Output Parameters, General Operating, and Symbology Menus).

Keyboard / Terminal and RS-232 (Host Port) Connector: DB–15 Pin Female

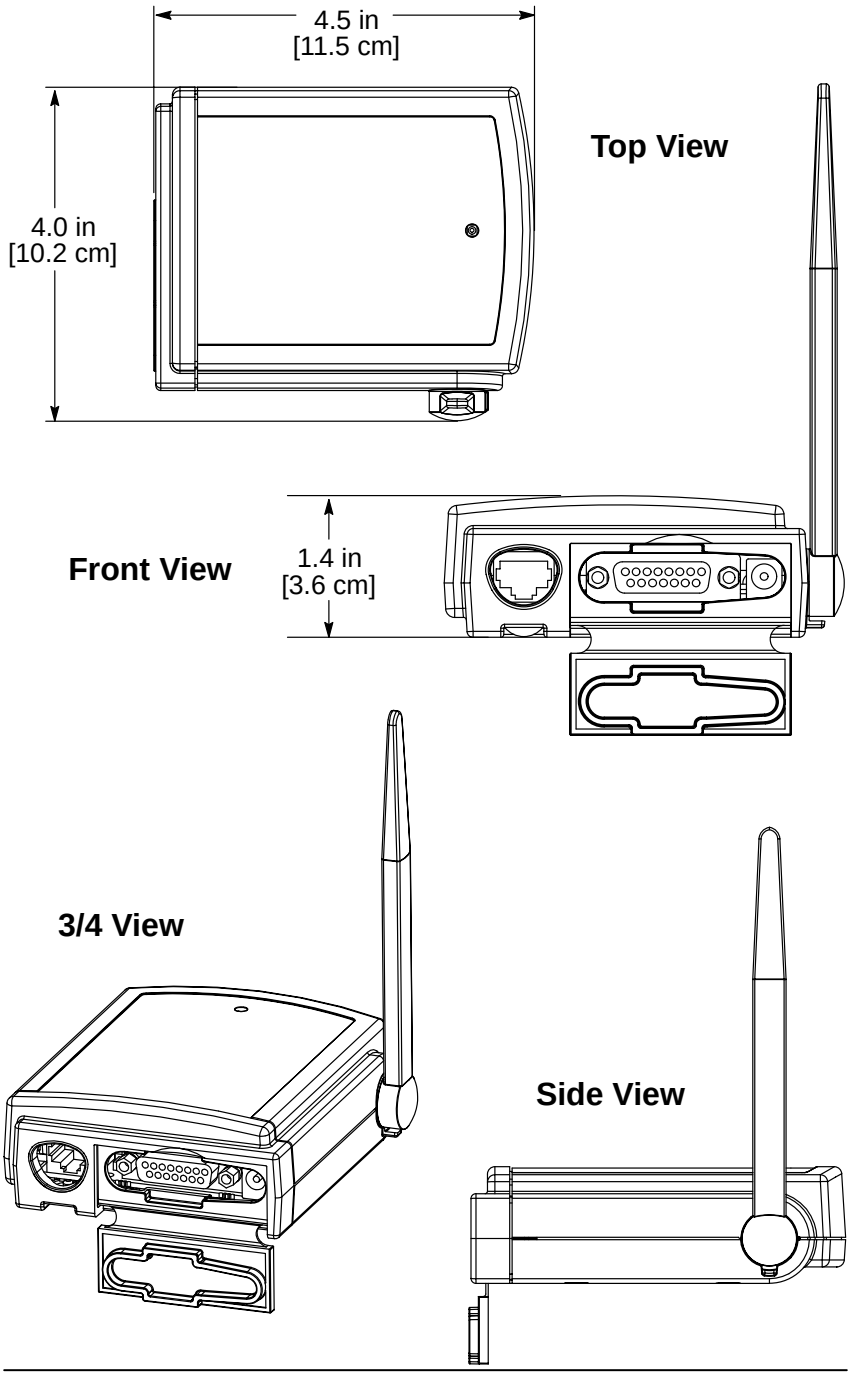
Pin	Signal Name	Description
1	GND	Power/Signal Ground
2	VCC	5 Volt DC Power Out
3	RXD	RS-232 Receive Data (input)
4	CTS	RS-232 Clear to Send (input)
5	KDATA	Keyboard Data from Keyboard
6	KCLK	Keyboard Clock from Keyboard
7	Reserved	Future use
8	Reserved	Future use
9	VIN	High Voltage Power (input, maximum = 14 VDC)
10	BSTRAP	MCU Bootstrap Mode Startup Signal (input)
11	TXD	RS-232 Transmit Data (output)
12	RTS	RS-232 Request to Send (output)
13	TDATA	Keyboard Data to Terminal
14	TCLK	Keyboard Clock to Terminal
15	Reserved	Future use

External Power Connector

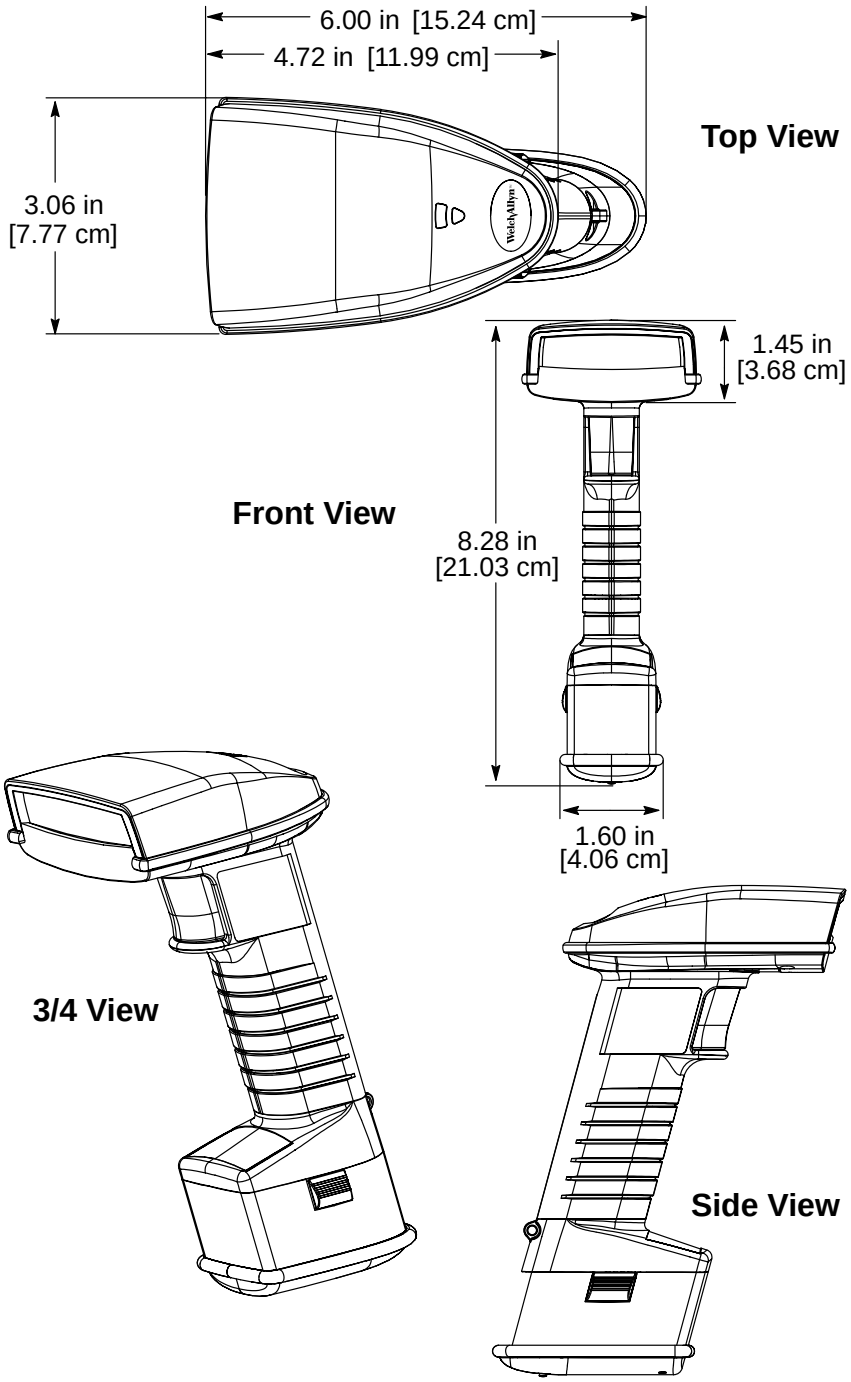
DC power to the cordless Base can come from an external power supply or from the terminal to which the Base is connected. External power is provided through a two-position barrel-type connector on the Base's back panel. The input voltage range is 4 VDC to 14 VDC and the schematic diagram is shown below.



Cordless Base Dimensions

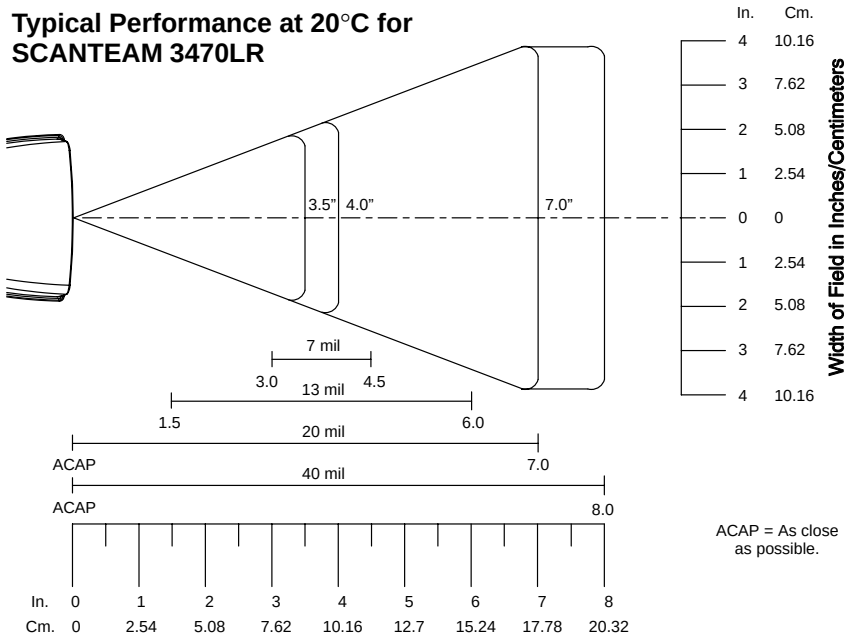


Cordless Scanner Dimensions



Scan Maps

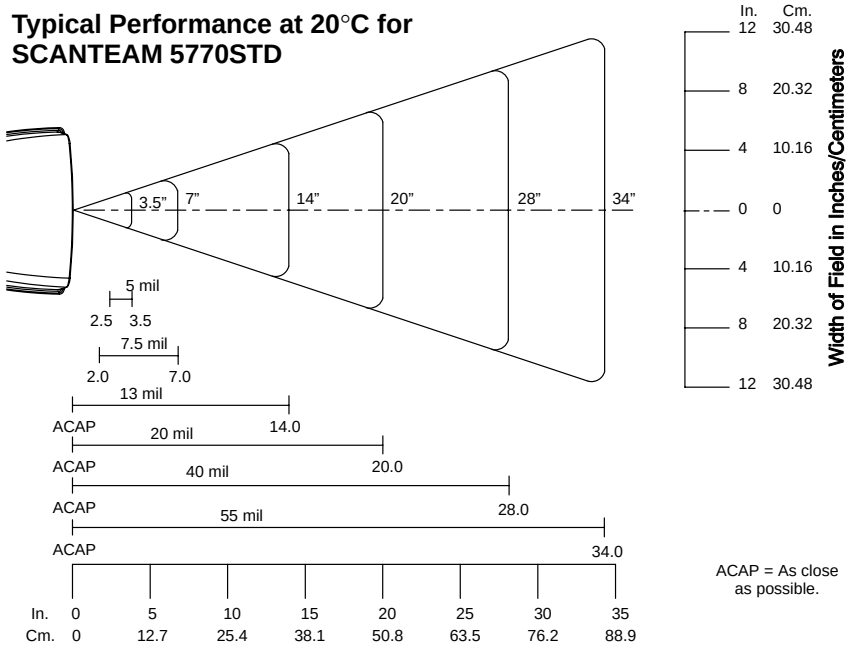
Typical Performance at 20°C for SCANTEAM 3470LR



ACAP = As close as possible.

Typical Depth of Field in Inches/Centimeters

Typical Performance at 20°C for SCANTEAM 5770STD

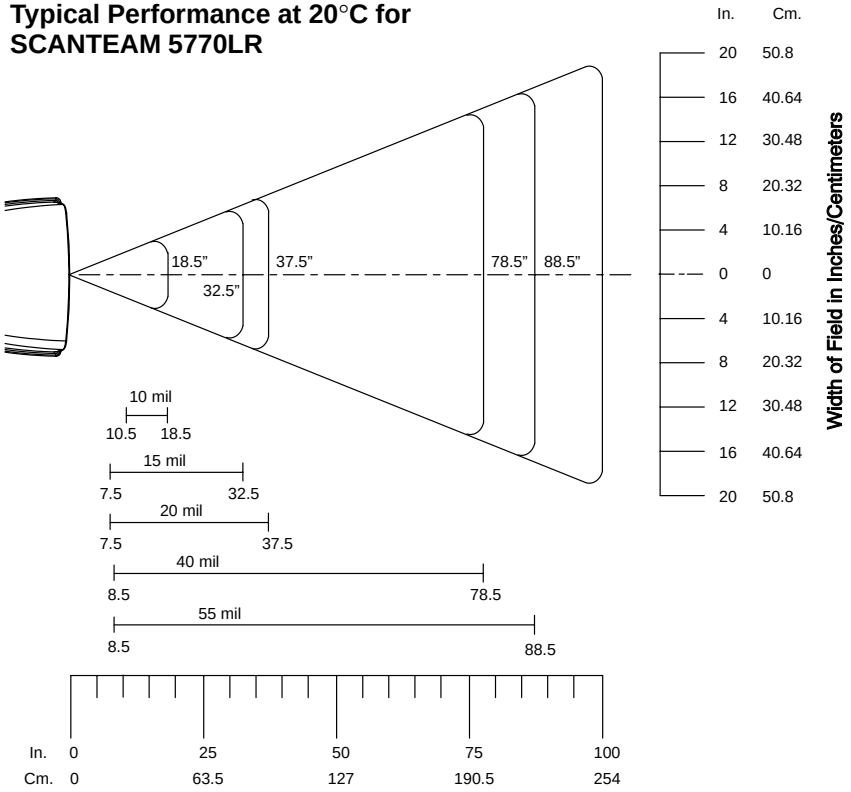


ACAP = As close as possible.

Typical Depth of Field in Inches/Centimeters

Scan Maps

Typical Performance at 20°C for SCANTEAM 5770LR



Typical Depth of Field in Inches/Centimeters

Two additional depth of field measurements, using special reflective bar code targets, are shown below:

Target X Dimension	*Near Distance*	*Far Distance*
70-mil reflective	68 inches (172.7 cm)	13.4 feet (4.08 m)
100-mil reflective	82 inches (208.3 cm)	17.4 feet (5.30 m)

Notes...

Notes:
The space below may be used for notes. ...

Maintenance

The Cordless Scanning System provides reliable and efficient operation with a minimum of care. Although specific maintenance is not required, the following periodic checks ensure dependable operation:

Cleaning the Scan Window of the Cordless Scanner

Scanning performance may degrade if the Cordless Scanner's scan window is not clean. If the window is visibly dirty, or if the scanner isn't scanning well, clean the scan window with a soft cloth or facial tissue dampened with water (or a mild detergent– water solution). If a detergent solution is used, rinse with a clean tissue dampened with water only.

The Cordless Scanner and Base housings may also be cleaned the same way.

Inspecting Cords and Connectors

Inspect the Cordless Base's interface cable and connector for wear or other signs of damage. A badly worn cable or damaged connector may interfere with operation. Contact your Welch Allyn distributor for information about cable replacement. Cable replacement instructions on page 8–2.

Examining the Cordless Scanner and Cordless Base Housings

Routinely examine the Cordless Scanner and Cordless Base housings for signs of damage. A damaged housing may cause the internal components to move and may result in a malfunctioning unit.

Care and Handling of the Battery Pack

Proper handling of the batteries while recharging extends the useful life of the batteries. New battery packs are shipped uncharged. In order to break in the new battery, we suggest that you fully charge and discharge the packs approximately two to four times so they can reach their full rated capacity.

If the battery pack is left plugged in for extended periods of time (for instance, several weeks) the contacts between the prongs may become dirty, causing charging problems. Clean the prongs with a cotton swab and rubbing alcohol to remove any accumulation of dirt.

Warning:

Do not submerge the Cordless Scanner or the Cordless Base in water. Their housings are not water–tight.

Do not use abrasive wipers or tissues on the scan window: abrasive wipers may scratch the window.

Never use solvents (alcohol or acetone) on the housings or the window: solvents may damage the finish or the window.

Do not open the Cordless Scanner or the Cordless Base. There are no serviceable parts inside.

Maintenance & Troubleshooting

Replacing the Interface Cable

The standard host interface cable is attached to the Cordless Base with a 15–pin D–type receptacle connector. Tighten the holding screws to properly seat the interface connector. The cable is designed to be field replaceable.

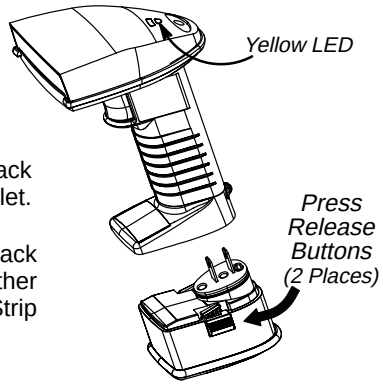
Auxiliary Port cables use a 10-position modular plug. To remove the Aux Port cable, depress the dimple located on the bottom of the Base unit underneath the Aux Port and pull the cable from the unit.

Notes:

- Order replacement cables from Welch Allyn or from an authorized distributor.
- When ordering a replacement cable, specify the cable part number of the original interface cable.

Recharging and Replacing the Cordless Scanner's Battery Pack

When the battery pack needs to be recharged, the yellow LED on top of the scanner pulses in short, continuous blinks and the scanner won't beep when you pull the trigger. Follow the instructions below to recharge and replace the Cordless Scanner battery pack.



❶ Detach the battery pack from the bottom of the Cordless Scanner (*see Figure at right*).

❷ In North America, plug the battery pack directly into any common 120 Volt outlet.

❸ To charge more than one battery pack (or to charge the pack for all other countries), use the Charge Strip (available as an accessory).

The LED on the bottom of the battery pack is red when the unit is charging; it shows green when it is fully charged and ready to use. (*See Battery Pack Specifications, page 7–4 for charging time and expected hours of operation.*)

❹ After the battery pack is fully charged, attach to the Cordless Scanner by pressing the pack firmly (align the prongs on the pack with the mating receptacles) in the base of the scanner until the release buttons click, holding the pack firmly in place.

❺ If the scanner wasn't previously associated to a base, scan the Association Bar Code on the top of the Base. If the scanner was previously associated to a base, it will automatically re-associate. (The association process takes about ten seconds.)

Maintenance & Troubleshooting

To Reset Factory Settings
If you are unsure of the programming options that have been set up in your Cordless System, or you've changed some options and now want the factory settings restored, refer to Main Menu Selections in Section 2 and scan the ***Factory Default Settings*** bar code.

Troubleshooting

The Cordless System automatically performs self-tests whenever you turn it on. If your Cordless Scanner or Cordless Base is not functioning properly, review the following Troubleshooting Guide to isolate the problem.

Troubleshooting Guide

Is the power on? Is the Scanner's red illuminated beam on?
If the red scan beam on the Cordless Scanner isn't illuminated, check that: ❶ the battery pack is connected properly to the Cordless Scanner. ❷ the battery pack is not low on power (check the low battery LED).

Is the Cordless System having trouble reading your bar codes?
If the Cordless System isn't reading bar codes well, check that the bar codes: ❶ aren't smeared, rough, scratched, or exhibiting voids. ❷ aren't coated with frost or water droplets on the surface. ❸ are enabled in the Cordless System (*see Section 5, Symbology Menu*).

Is the bar code displayed but not "entered"?
The bar code is displayed on the host device correctly, but you still have to press a key to enter it (*the Enter/Return key or the Tab key, for example*). ***You need to program a suffix.*** Programming a suffix enables the Cordless System to output the scanned bar code *plus* the key you need (such as a "CR," carriage return) to enter the bar code into your application. (*See Suffix Selection in Section 4, Application Work Group Menu.*)

Maintenance & Troubleshooting

Does the Cordless System read your bar code incorrectly?

If the Cordless System reads a bar code (*one beep for a good read*), but the bar code is not displayed correctly on the host screen:

❶ The Cordless System may not be programmed for the appropriate terminal interface.

Example: *You scan "12345" and the host displays "@es%."*

Reprogram the Cordless System with the correct "Plug and Play" or Terminal Selection bar code (*see Section* 1).

❷ The Cordless System may not be programmed to output your bar code properly.

Example: *You scan "12345" and the host displays "A12345B."*

Reprogram the Cordless System with the proper Symbology selections (*see Section 5, Symbology Menu*).

The Cordless System won't read your bar code at all?

If the Cordless System will not read your bar code:

❶ Try scanning the Sample Bar Codes (*found on the back cover of the Systems Manual*).

If the Cordless System reads the Sample Bar Codes, check that your bar code is readable. (*See "Is the Cordless System having trouble reading your bar codes" on the previous page.*)

Verify that your bar code symbology is enabled. (*See Sections 5, Symbology Menu.*)

If the Cordless System does not read the Sample Bar Codes either, continue to #2, below...

❷ If the Cordless System won't read the Sample Bar Codes either:

Verify that the bar code symbologies are enabled. (*See Sections 5, Symbology Menu.*)

Scan the "Default All... " bar code on each symbology menu page in Section 5 to enable most symbologies.

Obtaining Factory Service

Welch Allyn provides service for all its products through a service center located at its manufacturing facilities in Skaneateles, New York. To obtain warranty or non–warranty service, return the unit to Welch Allyn (postage paid) with a copy of the dated purchase record attached.

In the United States, please contact the Welch Allyn Product Service Department at the address/telephone number listed below to obtain a Return Material Authorization number (RMA #).

Welch Allyn, Inc.
Data Collection Division
Product Service Department
4619 Jordan Road
P.O. Box 187
Skaneateles Falls, New York 13153–0187

Product Service Department
Telephone: (315) 685–4278 *or* 685–4360
Fax: (315) 685–4156

For service in Europe, please contact your Welch Allyn representative (at appropriate address below) or your local distributor.

Welch Allyn, Ltd.
Block 1, Bracken Business Park
Sandyford
Co Dublin
Ireland

Telephone: Int+353–1–216–0070
Fax: Int+353–1–295–6353

U. K. Office
Dallam Court Dallam Lane
Warrington, Cheshire WA2 7LT
England

Telephone: Int+44 1925 240055
Fax: Int+44 1925 631280

For service in Asia, please contact your Welch Allyn representative (at address below) or your local distributor.

Welch Allyn, Hong Kong Office
10/F Tung Sun Commercial Centre
194–200 Lockhart Road
Wanchai, Hong Kong

Telephone: Int+852–2511–3050 *or* 2511–3132
Fax: Int+852–2511–3557

Customer Support & Warranty

Technical Support

If, after reviewing the Troubleshooting Section, you still need assistance installing or troubleshooting your Cordless System, please call your Distributor or the nearest Welch Allyn technical support office.

North America:

Telephone: (315) 685–2476 (8 a.m. to 5 p.m. EST)
Fax number: (315) 685–4960
Email: *dcd_techsupt@welchallyn.com*

Europe:

United Kingdom Telephone: Int+44 1925 240055
Ireland Telephone: Int+353–1–216–0070

Asia:

Telephone: Int+852–2511–3050 *or* 2511–3132

Limited Warranty

Welch Allyn, Inc., hereby warrants its products to be functional and free from manufacturing defects at the time of delivery. Welch Allyn, Inc. further warrants that it will replace or repair, at its option, any unit that fails to perform according to Welch Allyn's published specifications during a specified duration (see chart below) from the time of shipment by Welch Allyn, Inc. to the user at the time it is purchased from any of Welch Allyn Inc.'s Authorized Distributors. Any attempt on the part of the user to disassemble or service the equipment shall void the warranty.

The warranty does not apply to product which have been damaged by improper handling, shipping, or misuse. The warranty does not apply, if, in the sole opinion of Welch Allyn, Inc., the unit has been damaged by accident, misuse, neglect, improper shipping and handling. Since the unit is sensitive to static, the responsibility to protect it from static damage is solely that of the user. The warranty is valid only if the unit has not been tampered with or serviced by any party unauthorized by Welch Allyn, Inc. as a repair facility.

THE WARRANTIES SET FORTH HEREIN ARE IN LIEU OF ANY AND ALL OTHER WARRANTIES EXPRESSED OR IMPLIED INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE BUYER ACKNOWLEDGES THAT NO OTHER REPRESENTATIONS WERE MADE OR RELIED UPON WITH RESPECT TO THE QUALITY AND FUNCTION OF THE CORDLESS SYSTEM HEREIN SOLD.

In no event shall Welch Allyn, Inc. or its resellers be liable for any loss, inconvenience or damage whether direct, incidental, consequential or otherwise, and whether caused by negligence or other fault resulting from the breach of any express warranty except as set forth herein. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state or country to country.

Limited Warranty Durations

Cordless CCD Scanner	Cordless Laser Scanner	Cordless Base Unit	Nicad Battery	NiMH Battery
3 Years	3 Years	3 Years	1 Year	1 Year

Default Chart

Quick Start and Interface Menu Defaults

The following chart lists the factory default Quick Start and Interface Menu settings (indicated by a "✶" on the programming menu pages).

Parameter Name	*Default Setting*	*Page Reference*
Country Code Selections		
Keyboard Country	United States	Page 2–6
Keyboard & Delays Selections		
Keyboard Layout	Layout 1 (Telephone)	Page 2–7
Keyboard Style	Regular	Page 2–8
Keyboard Style Modifiers	Control + ASCII Mode Off Turbo Mode Off Numeric Keypad Mode Off Auto Direct Connect Off	Page 2–9 Page 2–9 Page 2–9 Page 2–9
Output Delays Intercharacter Delay	00 (x5mS)	Page 2–10
Interfunction Delay	00 (x5mS)	Page 2–10
Intermessage Delay	00 (x5mS)	Page 2–10
Wand Emulation Selections		
Transmission Rate	25 ips	Page 2–11
Output Polarity	Black High	Page 2–11

Communications Menu Defaults

The following chart lists the factory default Communications Menu settings (indicated by a "✶" on the programming menu pages).

Parameter Name	*Default Setting*	*Page Reference*
Host Port Communications		
Baud Rate	38400	Page 3–2
Parity	None	Page 3–3
Word Length Data Bits	8	Page 3–3
Word Length Stop Bits	1	Page 3–4
Serial Wedge Output	None (RS-232)	Page 3–4
Hardware Flow Control	Disable	Page 3–5
Host ACK	Disable	Page 3–6

Default Chart

Communications Menu Defaults

The following chart lists the factory default Communications Menu settings (indicated by a "✶" on the programming menu pages).

Parameter Name	*Default Setting*	*Page Reference*
Auxiliary Port Communications		
Baud Rate	38400	Page 3–7
Parity	None	Page 3–8
Word Length Data Bits	8	Page 3–8
Word Length Stop Bits	1	Page 3–9
Protocol	Record	Page 3–9
Aux Port I.D. Transmit	Disable	Page 3–9
Hardware Flow Control	Disable	Page 3–10
Data Character		
SOR (Start of Record)	00 (NUL)	Page 3–10
EOR (End of Record)	0D (CR)	Page 3–10
SOB (Start of Block)	00 (NUL)	Page 3–10
EOB (End of Block)	04 (EOT)	Page 3–10
Aux Prefix / Suffix		
Aux Prefix (Incoming Data)	None	Page 3–11
Aux Suffix (Incoming Data)	None	Page 3–11
Aux Prefix (Outgoing Data)	None	Page 3–11
Aux Suffix (Outgoing Data)	CR	Page 3–11
Aux Data Formatter		
Aux Data Formatter	Enable	Page 3–15
Aux Require Data Format?	Don't Require	Page 3–15
Aux Data Format	None	Page 3–15

Default Chart

Application Work Groups Menu Defaults

The following chart lists the factory default Application Work Groups Menu settings (indicated by a "✶" on the programming menu pages).

Parameter Name	*Default Setting*	*Page Reference*
Output Selections (User Feedback)		
Application Work Goup	Group 0	Page 4–2
Beeper Volume	High	Page 4–3
Scanner Voting	Disable	Page 4–3
Laser Marker Beam	Disable	Page 4–4
AIM I.D. Transmit	Disable	Page 4–4
Welch Allyn Code I.D. Transmit	Disable	Page 4–4
Prefix / Suffix Selection		
Prefix	None	Page 4–6
Suffix	CR	Page 4–6
Data Formatter Selections		
Data Formatter	Enable	Page 4–10
Require Data Format?	Don't Require	Page 4–10
Data Format	None	Page 4–10

Symbology Menu Defaults – Industrial

The following chart lists the factory default Industrial Symbology Menu settings (indicated by a "✶" on the programming menu pages).

Parameter Name	*Default Setting*	*Page Reference*
Codabar Selection		
Codabar	On	Page 5–2
Start / Stop Characters	Don't Transmit	Page 5–2
Message Length	Min = 2, Max = 60	Page 5–2
Check Character	Don't Validate	Page 5–3
Check Character	Don't Transmit	Page 5–3
Concatenation	Enable	Page 5–3
Concatenation	Don't Require	Page 5–3

Default Chart

Symbology Menu Defaults – Industrial

The following chart lists the factory default Industrial Symbology Menu settings (indicated by a "✶" on the programming menu pages).

Parameter Name	*Default Setting*	*Page Reference*
Code 39 Selection		
Code 39	On	Page 5–4
Start / Stop Characters	Don't Transmit	Page 5–4
Message Length	Min = 0, Max = 48	Page 5–4
Check Character	Don't Validate	Page 5–4
Check Character	Don't Transmit	Page 5–4
Full ASCII	Enable	Page 5–5
Append	Disable	Page 5–5
Code 93 Selection		
Code 93	On	Page 5–6
Message Length	Min = 0, Max = 80	Page 5–6
Interleaved 2 of 5 Selection		
Interleaved 2 of 5	On	Page 5–7
Message Length	Min = 4, Max = 80	Page 5–7
Check Digit	Don't Validate	Page 5–7
Check Digit	Don't Transmit	Page 5–7
Lengths of 6, 14 or 16	Disable	Page 5–7
Code 2 of 5 Selection		
Code 2 of 5	On	Page 5–8
Message Length	Min = 4, Max = 48	Page 5–8
Matrix 2 of 5 Selection		
Matrix 2 of 5	On	Page 5–8
Message Length	Min = 4, Max = 80	Page 5–8
Code 11 Selection		
Code 11	On	Page 5–9
Check Digits Required	2 Check Digits	Page 5–9
Message Length	Min = 4, Max = 80	Page 5–9
Code 128 Selection		
Code 128	On	Page 5–9
Message Length	Min = 0, Max = 80	Page 5–9

Default Chart

Symbology Menu Defaults – Retail

The following chart lists the factory default Retail Symbology Menu settings (indicated by a "✶" on the programming menu pages).

Parameter Name	*Default Setting*	*Page Reference*
EAN / JAN 8 / 13 Selection		
EAN / JAN 8	On	Page 5–10
EAN / JAN 13	On	Page 5–10
Check Digit	Transmit	Page 5–10
UPC A Selection		
UPC A	On	Page 5–11
Check Digit	Transmit	Page 5–11
Number System	Transmit	Page 5–11
UPC E0 Selection		
UPC E0	On	Page 5–12
Check Digit	Transmit	Page 5–12
Number System	Transmit	Page 5–12
Version E Expand	Don't Expand	Page 5–12
UPC E1 Selection		
UPC E1	Off	Page 5–12
EAN / UPC Addenda Selection		
EAN / UPC Addenda	Don't Require	Page 5–13
EAN Two Digit Addenda	Disable	Page 5–13
EAN Five Digit Addenda	Disable	Page 5–13
UPC Two Digit Addenda	Disable	Page 5–13
UPC Five Digit Addenda	Disable	Page 5–13

Programming Chart

This programming chart contains alphanumeric bar codes used for setting additional programming options, such as the digits representing Symbology Message Length. Scan the programming selection bar code first, and then scan the bar code(s) representing the option you want to set. Programming selections that require options to be set are marked with a ‡ symbol.

0

1

2

3

4

5

6

7

8

Programming Chart

9

A

B

C

D

E

F

Discard Current Changes

Save

Sample Bar Codes

Code 39

TEST–SHEET

Matrix 2 of 5

6543210

Code 128

CODE 128

Code 93

123456–9$

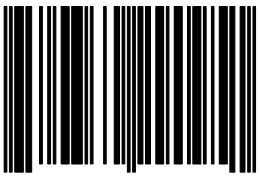
Codabar

0013557900

Code 2 of 5

123456

EAN 13



9 780330 290951

UPC A with 5 digit addenda

56098

0 12345 67890 5

Interleaved 2 of 5

1234567890

34/5770/SM Rev A

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